
Chapter 7



Toxics Release Inventory Data for Furniture (SIC Code 25)

A Look at the Furniture and Fixtures Industry (SIC Code 25)

The furniture and fixtures industry (SIC code 25) manufactures furniture for homes, offices, public buildings, and restaurants. It produces fixtures such as partitions, shelving, and display cases for offices and stores. Many products of this sector are made of wood, but household furniture made of metal and office and store fixtures made of non-wood materials are included. This sector also produces mattresses and bedsprings. Automobile and aircraft seats are included, classified as furniture for public buildings and related uses. Box 7-1 lists Standard Industrial Classification (SIC) codes and their designations for this sector. In TRI, SIC codes are given as reported by the facilities; these may differ from information in economic and other data collections.

The furniture sector shipped products valued at \$55.70 billion in 1996, up from \$53.47 billion in 1995 (both in current dollars). This was about 1.5% of the value of shipments of all U.S. manufacturing. Employment in this sector was 515,000 in 1996, having increased steadily since 1991. From 1989 to 1996, furniture production rose 6.3%, a modest expansion compared to a

17.6% increase for all U.S. manufacturing sectors over that period (see Chapter 1, Table 1-10). Household furniture manufacture (SIC code 251) constituted approximately half the sector's 1996 economic activity, with \$25.43 billion in shipments and 273,000 in employment.

Processes in production of wood furniture and fixtures include drying, sawing and planing, assembly, and coating or finishing. Some furniture is finished before assembly. Assembly of upholstered wood furniture typically involves solvent-based adhesives, while non-upholstered wood furniture is joined using "hot melt" adhesive or polyvinyl acetate. Veneer (a thin layer of wood) may be applied, requiring adhesives along with heat and/or pressure. Ammonia and acetone may be applied to remove natural wood rosin. Wood surfaces are then bleached (often with hydrogen peroxide), coated, and finished for indoor or outdoor use. Coatings and finishes may be applied, dried, and sanded several times. Outdoor furniture is usually treated with a fungicide and water-repellent.

Adhesives commonly used in assembling furniture contain solvents such as methyl ethyl ketone, methyl isobutyl ketone, toluene, and xylene. Coating and finishing applications typically involve solvents in stains, paints, finishes, and inks (used to simulate wood grain); toluene and xylene are common.



Chapter 7 — TRI Data for Furniture

Box 7-1. SIC Code 25, Furniture and Fixtures: Codes and Classifications

SIC Code	Industry Description
251 Household Furniture	
2511 Wood Household Furniture, Except Upholstered	Manufacture of wood household furniture commonly used in dwellings. Manufacture of camp furniture.
2512 Wood Household Furniture, Upholstered	Manufacture of upholstered furniture on wood frames.
2514 Metal Household Furniture	Manufacture of metal household furniture of a type commonly used in dwellings.
2515 Mattresses, Foundations, and Convertible Beds	Manufacture of mattresses (innerspring, box spring, and non-innerspring) containing felt, foam rubber, urethane, hair, or any other filling material. Manufacture of assembled wire springs (fabric, coil, or box) for use on beds, couches, and cots. Manufacture of dual-purpose sleep furniture, such as convertible sofas and chair beds.
2517 Wood Television, Radio, Phonograph, and Sewing Machine Cabinets	Manufacture of wood cabinets for radios, television sets, phonographs, and sewing machines.
2519 Household Furniture, nec*	Manufacture of reed, rattan, and other wicker furniture, plastics and fiberglass household furniture and cabinets, and other miscellaneous household furniture.
252 Office Furniture	
2521 Wood Office Furniture	Manufacture of office furniture, chiefly of wood.
2522 Office Furniture, Except Wood	Manufacture of office furniture, except furniture chiefly of wood.
253 Public Building and Related Furniture	
2531 Public Building and Related Furniture	Manufacture of furniture for schools, theaters, assembly halls, churches, and libraries. Includes manufacture of seats for public conveyances, automobiles, and aircraft.
254 Partitions, Shelving, Lockers, and Office and Store Fixtures	
2541 Wood Office and Store Fixtures, Partitions, Shelving, and Lockers	Manufacture of shelving, lockers, and office and store fixtures, plastics laminated fixture tops, and related fabricated products, chiefly of wood. (Includes prefabricated partitions designed to be attached to the floor.)
2542 Office and Store Fixtures, Partitions, Shelving, and Lockers, Except Wood	Manufacture of office and store fixtures, shelving, storage racks, lockers, and related products, chiefly of materials other than wood. (Includes prefabricated partitions designed to be attached to the floor.)
259 Miscellaneous Furniture and Fixtures	
2591 Drapery Hardware and Window Blinds and Shades	Manufacture of curtain and drapery rods, poles, and fixtures. Manufacture of venetian blinds and other window blinds and shades, except of canvas.
2599 Furniture and Fixtures, nec*	Manufacture of miscellaneous furniture and fixtures, including hospital beds and furniture specially designed for use in restaurants, bars, cafeterias, bowling centers, and ships.

*nec: not elsewhere classified; these are generally referred to as "miscellaneous" products in their categories.

Sources

Executive Office of the President, Office of Management and Budget, *Standard Industrial Classification Manual, 1987*: Standard Industrial Classification (SIC) codes and industry descriptions.

U.S. *Industry & Trade Outlook '98*, DRI/McGraw Hill, Standard & Poor's, and U.S. Department of Commerce, International Trade Administration, 1998: economic analyses, also provides some information on environment and industrial processes for selected industries.

U.S. Census Bureau, *1996 Annual Survey of Manufactures: Statistics for Industry Groups and Industries*, M96(AS)-1, February 1998 <<http://www.census.gov/prod/www/titles.html#mm>>: value of shipments and employment. Supplemental data from U.S. Census Bureau <<http://www.census.gov>> for some industries.

U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance, Office of Compliance, *Profile of the Wood Furniture and Fixtures Industry*, Sector Notebook project, EPA/310-R-95-003, September 1995 <<http://es.epa.gov/oeca/sector/index.html>>: industry processes and technologies, pollutant sources, and selected economic data.



As previously mentioned, furniture and fixtures classified in SIC code 25 also include those constructed of non-wood materials. Production of furniture and fixtures from metals, plastics, and other materials is similar to processes associated with other industrial sectors. The manufacture of metal furniture, for example, involves preparation and finishing similar to processes applied in production of some fabricated metal products (SIC code 34).

1996 TRI Data for Furniture

Table 7-1 summarizes TRI reporting by the furniture sector for 1996. A total of 1,250 forms were submitted by this sector in 1996. Of this total, only 26 Form As (or 2.1%) were submitted by this sector, well below the 10.1% TRI average. Form A certification statements certify that a facility's total annual reportable amount of a TRI chemical was less than 500 pounds for the year and that the facility did not manufacture, process, or otherwise use more than 1 million pounds. (The Form A certification statement is explained in Chapter 1.)

The wood household furniture industry (SIC code 2511) submitted 630 forms, half (50.4%) of the forms submitted by this sector. There were 168 forms that reported more than one SIC code within SIC code 25 to define the facility's operations. This "multiple-codes" group of forms (explained below) represented 13.4% of all forms submitted by the furniture sector for 1996. The wood office furniture industry (SIC code 2521) submitted the third-largest number of forms in the sector, 95 forms or 7.6% of the total.

Some facilities in the furniture sector manufacture distinct, but related, products that are classified in different SIC codes within SIC code 25. A facility may manufacture office furniture from both wood and non-wood

materials. These activities are classified in SIC code 2521 (wood office furniture) and SIC code 2522 (office furniture, except wood). Another facility may manufacture both wood household furniture and wood office furniture. These products are classified in SIC codes 2511 and 2521, respectively. These facilities may report multiple SIC codes on their TRI forms. (Box 1-5 in Chapter 1 further explains reporting of multiple SIC codes and its affect on the analyses presented in the TRI data release.)

Two industrial groups dominated TRI reporting in the furniture sector in 1996. The wood household furniture industry (SIC code 2511) ranked first for releases (on-site, off-site, and total on- and off-site) and for total production-related waste. The multiple-codes group reported the largest amounts for other on-site waste management and transfers off-site for further waste management.

The furniture sector reported 35.9 million pounds of total on- and off-site releases, consisting almost entirely (99.6%) of on-site releases. Ranking first in the sector, the wood household furniture industry (SIC code 2511) reported 22.2 million pounds of total releases, including 22.1 million pounds on-site and 91,000 pounds off-site. This industry's reported releases amounted to 61.7% of the sector's total. The multiple-codes group ranked second for the release categories, with 5.3 million pounds of total releases (5.27 million pounds on-site and 19,000 pounds off-site). Multiple-codes forms accounted for 14.7% of the sector's total releases. The wood office furniture industry (SIC code 2521) reported the third-largest on-site releases and total releases, with 2.1 million pounds (approximately 6%).

The multiple-codes group reported 2.7 million pounds of other on-site waste management, 65.7% of the sector's 4.1 million-pound total in this category. This was the only category in which the wood household furniture industry did not rank first or second in the sector. Non-wood partitions and fixtures (SIC code 2542) reported the second-



Chapter 7 — TRI Data for Furniture

Table 7-1. Summary of TRI Information by 4-digit SIC Code, 1996: Furniture, SIC Code 25

Total On- and Off-site Releases Rank	Total Production-related Waste Rank	SIC Code	Industry	Total Facilities Number	Total Forms Number	Form As Number	Total On-site Releases Pounds	Total Off-site Releases Pounds	Total On- and Off-site Releases Pounds
1	1	2511	Wood Household Furniture	183	630	0	22,059,136	91,199	22,150,335
6	8	2512	Upholstered Household Furniture	23	38	0	783,320	0	783,320
13	12	2514	Metal Household Furniture	12	17	0	269,490	0	269,490
11	15	2515	Mattresses & Bedsprings	2	3	1	337,599	0	337,599
14	13	2517	Wood TV & Radio Cabinets	3	8	0	193,575	0	193,575
9	10	2519	Household Furniture, nec*	11	21	0	507,354	0	507,354
3	3	2521	Wood Office Furniture	36	95	2	2,129,854	1,928	2,131,782
4	4	2522	Office Furniture, Except Wood	32	65	7	1,225,136	0	1,225,136
7	5	2531	Public Building & Related Furniture	23	53	4	683,843	5,985	689,828
10	11	2541	Wood Partitions & Fixtures	21	31	0	424,332	2,116	426,448
5	6	2542	Partitions & Fixtures, Except Wood	25	48	0	893,719	529	894,248
12	7	2591	Drapery Hardware & Blinds & Shades	8	24	0	333,297	0	333,297
8	9	2599	Furniture & Fixtures, nec*	25	47	2	630,226	4,688	634,914
2	2		Multiple within SIC Code 25	48	168	10	5,269,424	19,413	5,288,837
15	14		Invalid SIC Code within SIC Code 25	1	2	0	10,500	0	10,500
			Total for SIC Code 25	453	1,250	26	35,750,805	125,858	35,876,663

Note: **On-site Releases** from Section 5 of Form R. **On-site Waste Management** from Section 8 of Form R. **Off-site Releases** from Section 6 (transfers off-site to disposal) of Form R. **Total Transfers Off-site for Further Waste Management** from Section 6 (excluding transfers off-site to disposal) of Form R. **Total Production-related Waste** sums Section 8 (Current Year, Column B) of Form R, except: **Non-production-related Waste** (remedial/catastrophic incidents). Facilities/forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category. One facility incorrectly reported 0 pounds of total production-related waste under SIC code 2515. The correct amount is 370,695 pounds. The total production-related waste rank of SIC code 2515 changes from 15 to 12.

*nec: not elsewhere classified.

largest other on-site waste management, with 455,000 pounds (11.2% of the total). Ranking third was drapery hardware and blinds and shades (SIC code 2591), with 381,000 pounds or 9.4%.

The multiple-codes group also ranked first for transfers off-site for further waste management in the furniture sector. Multiple-codes forms reported 7.1 million pounds, 54.5% of the sector's 13.1 million pounds in this category. Wood household furniture (SIC code 2511) ranked second, with 1.7 million pounds (13.4%), and public building and related furniture (SIC code 2531) was third, with 1.3 million pounds (10.0%).

Production-related waste reported in SIC code 25 totaled 57.8 million pounds in 1996. The wood household furniture industry (SIC code 2511) reported 25.4 million pounds, 44.0% of this total. Multiple-codes forms reported 19.3 million pounds, or 33.3%. Ranking third for total

production-related waste, the wood office furniture industry (SIC code 2521) reported 2.8 million pounds (4.8%).

Multiple SIC Codes in SIC Code 25

Table 7-2 further examines reporting of multiple SIC codes within SIC code 25. The most frequent combination, submitted on 34 forms, was for non-upholstered and upholstered household furniture made of wood (wood household furniture in SIC code 2511 and upholstered household furniture in SIC code 2512). Thirty-three forms reported the combination of wood partitions and fixtures (SIC code 2541) and non-wood partitions and fixtures (SIC code 2542).

Among multiple-codes groups in SIC code 25, the combination of wood office furniture (SIC code 2521), non-wood office furniture (SIC code 2522), and non-wood partitions and fixtures (SIC code



Table 7-1. Summary of TRI Information by 4-digit SIC Code, 1996: Furniture, SIC Code 25, Continued

SIC Code	Industry	Total Other On-site Waste Management Pounds	Total Transfers Off-site for Further Waste Management Pounds	Total Production-related Waste Pounds	Non-Production-related Waste Pounds
2511	Wood Household Furniture	176,677	1,747,568	25,423,289	20
2512	Upholstered Household Furniture	2,005	76,527	788,082	0
2514	Metal Household Furniture	20,970	57,694	335,415	0
2515	Mattresses & Bedspings	0	6,295	0	72
2517	Wood TV & Radio Cabinets	0	7,922	201,401	0
2519	Household Furniture, nec*	7,325	21,152	554,735	1
2521	Wood Office Furniture	14,284	587,487	2,762,682	0
2522	Office Furniture, Except Wood	286,683	777,365	2,252,266	0
2531	Public Building & Related Furniture	31,012	1,303,070	2,036,351	40
2541	Wood Partitions & Fixtures	6,404	69,517	519,279	0
2542	Partitions & Fixtures, Except Wood	454,834	807,107	1,832,715	0
2591	Drapery Hardware & Blinds & Shades	381,128	389,067	1,103,870	0
2599	Furniture & Fixtures, nec*	11,792	92,848	725,609	0
	Multiple within SIC Code 25	2,667,300	7,112,961	19,277,636	15
	Invalid SIC Code within SIC Code 25	0	1,000	10,610	0
	Total for SIC Code 25	4,060,414	13,057,580	57,823,940	148

Note: **On-site Releases** from Section 5 of Form R. **On-site Waste Management** from Section 8 of Form R. **Off-site Releases** from Section 6 (transfers off-site to disposal) of Form R. **Total Transfers Off-site for Further Waste Management** from Section 6 (excluding transfers off-site to disposal) of Form R. **Total Production-related Waste** sums Section 8 (Current Year, Column B) of Form R, except: **Non-production-related Waste** (remedial/catastrophic incidents). Facilities/forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category. One facility incorrectly reported 0 pounds of total production-related waste under SIC code 2515. The correct amount is 370,695 pounds. The total production-related waste rank of SIC code 2515 changes from 15 to 12.

*nec: not elsewhere classified.

2542) reported the largest amounts of total on- and off-site releases (1.6 million pounds) and total production-related waste (12.9 million pounds), as shown in Table 7-2. Fifteen forms reported this combination.

The combination of non-upholstered and upholstered wood household furniture (SIC codes 2511 and 2512, respectively) ranked second for both total on- and off-site releases (1.3 million pounds) and total production-related waste (1.5 million pounds). Ranking third, the combination of wood and non-wood partitions and fixtures (SIC codes 2541 and 2542, respectively), reported 1.0 million pounds of total releases and 1.4 million pounds of total production-related waste.

On- and Off-site Releases

Almost all of the sector's 35.9 million-pound total for on- and off-site releases in 1996 consisted of air emissions, which totaled 35.7 million pounds. The wood household furniture industry (SIC code 2511) reported 22.1 million pounds of air emissions, 61.7% of the sector's total air emissions.

The multiple-codes group (forms with more than one SIC code in SIC code 25) reported the second-largest amount of air emissions, 5.2 million pounds (14.7%). As noted above, these two industrial groups also reported the largest off-site releases (transfers to disposal), the wood household furniture industry with 92,000 pounds and the multiple-codes forms with 19,000 pounds.

Table 7-3 and Figure 7-1 present the sector's data for on- and off-site releases in 1996. Figure 7-2 shows the distribution of on- and off-site releases for the



Chapter 7 — TRI Data for Furniture

Table 7-2. Multiple SIC Codes, 1996: Furniture, SIC Code 25

SIC Codes	Total Forms Number	Form As Number	Total On-site Releases Pounds	Total Off-site Releases Pounds	Total On- and Off-site Releases Pounds	Total Other On-site Waste Management Pounds	Total Transfers Off-site for Further Waste Management Pounds	Total Production-related Waste Pounds	Non-Production-related Waste Pounds
2511 2512	34	0	1,300,661	0	1,300,661	7,600	157,887	1,469,614	15
2511 2512 2514	1	0	0	0	0	0	7,453	7,453	0
2511 2514	1	0	13,000	0	13,000	0	500	13,200	0
2511 2515	4	0	53,820	0	53,820	0	0	52,820	0
2511 2517 2531	1	0	11,250	0	11,250	0	950	11,700	0
2511 2521	14	0	279,469	0	279,469	0	24,494	303,415	0
2511 2521 2531	2	0	30,172	0	30,172	0	3,222	33,394	0
2511 2522 2599	1	1	0	0	0	0	0	0	0
2511 2541	1	0	21,416	0	21,416	0	1,930	23,346	0
2511 2599	1	0	5,202	0	5,202	0	0	5,201	0
2512 2521	1	0	26,000	0	26,000	0	960	26,960	0
2519 2521	1	0	250	0	250	1,180	2,580	2,591	0
2521 2517	1	0	11,786	0	11,786	0	0	11,786	0
2521 2522	18	0	352,445	18,400	370,845	273,300	564,822	1,190,232	0
2521 2522 2542	15	0	1,613,744	1	1,613,745	2,178,171	4,600,361	12,911,664	0
2521 2522 2599	8	4	47,200	0	47,200	0	93,100	139,550	0
2521 2531	8	0	175,166	0	175,166	4,346	9,910	189,422	0
2521 2541	1	0	37,260	0	37,260	0	0	37,260	0
2522 2531	2	0	55,477	0	55,477	0	11,869	66,979	0
2522 2542	5	0	187,487	1,000	188,487	120,000	320,829	621,187	0
2522 2599	9	0	507	12	519	60,203	636,989	696,472	0
2531 2542	2	0	19,390	0	19,390	0	10,465	28,634	0
2531 2599	4	0	5,403	0	5,403	0	13,165	18,568	0
2541 2542	33	5	1,022,319	0	1,022,319	22,500	651,475	1,416,188	0
Total for SIC Code 25	168	10	5,269,424	19,413	5,288,837	2,667,300	7,112,961	19,277,636	15

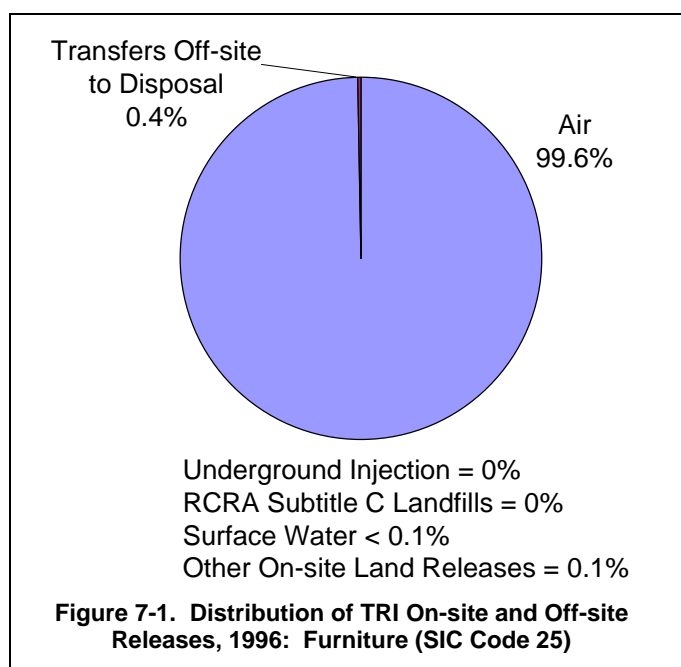
Note: On-site Releases from Section 5 of Form R. On-site Waste Management from Section 8 of Form R. Off-site Releases are transfers off-site to disposal from Section 6 of Form R. Total Transfers Off-site for Further Waste Management from Section 6 of Form R. Total Production-related Waste sums Section 8 of Form R, except: Non-production-related Waste (remedial/catastrophic incidents).

Table 7-3. TRI On-site and Off-site Releases, 1996: Furniture, SIC Code 25 (in Rank Order)

SIC Code	Industry	Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Class I Wells Pounds	Underground Injection Class II-V Wells Pounds	On-site Land Releases RCRA Subtitle C Landfills Pounds	On-site Land Releases Other Releases Pounds	Total On-site Releases Pounds	Off-site Releases Transfers Off-site to Disposal Pounds	Total On- and Off-site Releases Pounds
2511	Wood Household Furniture	22,058,018	25	0	0	0	1,093	22,059,136	91,199	22,150,335
	Multiple within SIC Code 25	5,244,133	3	0	0	0	25,288	5,269,424	19,413	5,288,837
2521	Wood Office Furniture	2,129,854	0	0	0	0	0	2,129,854	1,928	2,131,782
2522	Office Furniture, Except Wood	1,225,131	5	0	0	0	0	1,225,131	0	1,225,136
2542	Partitions & Fixtures, Except Wood	893,459	10	0	0	0	250	893,719	529	894,248
2512	Upholstered Household Furniture	783,320	0	0	0	0	0	783,320	0	783,320
2531	Public Building & Related Furniture	683,833	0	0	0	0	10	683,843	5,985	689,828
2599	Furniture & Fixtures, nec*	630,226	0	0	0	0	0	630,226	4,688	634,914
2519	Household Furniture, nec*	507,354	0	0	0	0	0	507,354	0	507,354
2541	Wood Partitions & Fixtures	424,332	0	0	0	0	0	424,332	2,116	426,448
2515	Mattresses & Bedsprings	337,599	0	0	0	0	0	337,599	0	337,599
2591	Drapery Hardware & Blinds & Shades	333,297	0	0	0	0	0	333,297	0	333,297
2514	Metal Household Furniture	269,490	0	0	0	0	0	269,490	0	269,490
2517	Wood TV & Radio Cabinets	193,575	0	0	0	0	0	193,575	0	193,575
	Invalid SIC Code within SIC Code 25	10,500	0	0	0	0	0	10,500	0	10,500
Total for SIC Code 25		35,724,121	43	0	0	0	26,641	35,750,805	125,858	35,876,663

Note: On-site Releases from Section 5 of Form R. Off-site Releases from Section 6 (off-site transfers to disposal) of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.

*nec: not elsewhere classified.



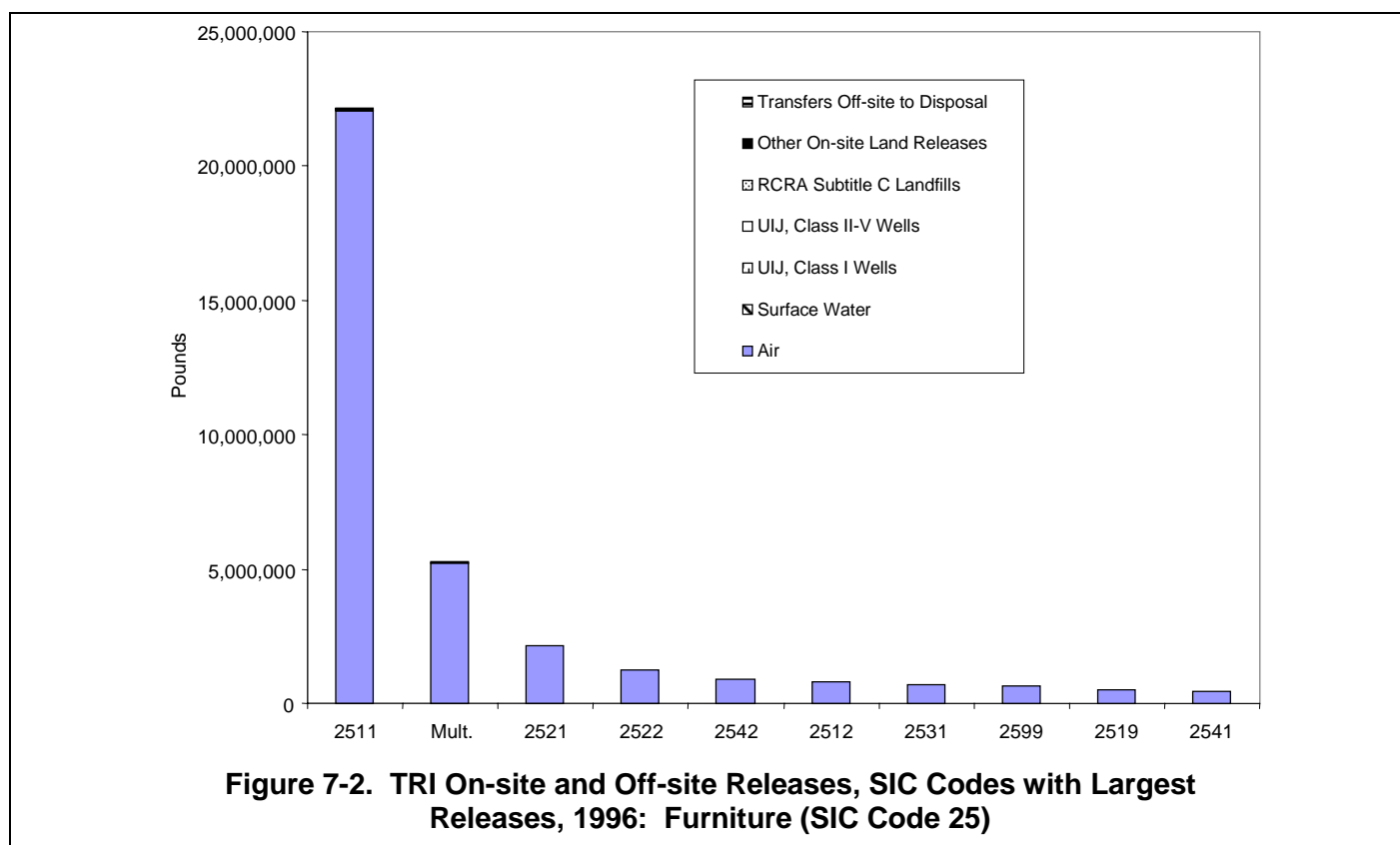
Note: On-site Releases from Section 5 of Form R. Off-site Releases from Section 6 (transfers off-site to disposal) of Form R.

industries (four-digit SIC code) with the sector's largest releases.

Other On-site Waste Management

The furniture sector reported 2.8 million pounds of on-site recycling in 1996, which was 70.0% of the sector's other on-site waste management. On-site treatment totaled 1.2 million pounds, or 29.1% of the total. Little on-site energy recovery was reported. Table 7-4 presents the sector's other on-site waste management data for 1996, and Figure 7-3 illustrates the distribution by waste management method.

The multiple-codes group reported 2.2 million pounds of on-site recycling and 427,000 pounds of on-site treatment, the largest amounts in this sector in both categories. On-site recycling reported on multiple-codes forms amounted to more than half (55.2%) of all other on-site waste management



Note: On-site Releases from Section 5 of Form R. Off-site Releases from Section 6 (transfers off-site to disposal). UIJ = underground injection. Forms with more than one 4-digit SIC code within SIC Code 25 are assigned to the "multiple" category.

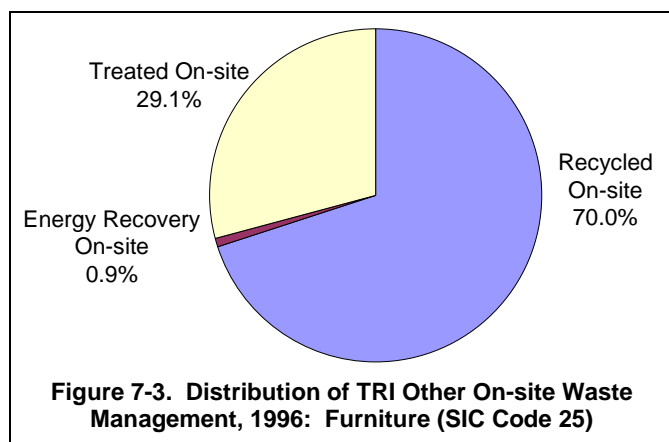


Table 7-4. TRI Other On-site Waste Management, 1996: Furniture, SIC Code 25 (in Rank Order)

SIC Code	Industry	Recycled On-site Pounds	Energy Recovery On-site Pounds	Treated On-site Pounds	Total Other On-site Waste Management Pounds
	Multiple within SIC Code 25	2,240,579	0	426,721	2,667,300
2542	Partitions & Fixtures, Except Wood	121,200	0	333,634	454,834
2591	Drapery Hardware & Blinds & Shades	32,168	0	348,960	381,128
2522	Office Furniture, Except Wood	273,527	0	13,156	286,683
2511	Wood Household Furniture	161,450	12,080	3,147	176,677
2531	Public Building & Related Furniture	0	0	0	0
2514	Metal Household Furniture	0	0	31,012	31,012
2521	Wood Office Furniture	0	0	20,970	20,970
2599	Furniture & Fixtures, nec*	689	13,595	0	14,284
2519	Household Furniture, nec*	0	11,792	0	11,792
2541	Wood Partitions & Fixtures	3,895	0	3,430	7,325
2512	Upholstered Household Furniture	6,404	0	0	6,404
2515	Mattresses & Bedsprings	2,005	0	0	2,005
2517	Wood TV & Radio Cabinets	0	0	0	0
	Invalid SIC Code within SIC Code 25	0	0	0	0
	Total for SIC Code 25	2,841,917	37,467	1,181,030	4,060,414

Note: Other On-site Waste Management from Section 8 of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.

*nec: not elsewhere classified.



Note: Data from Section 8 of Form R.

reported by the furniture sector. This included on-site recycling of 1.4 million pounds of xylenes reported by one facility, reporting SIC codes 2522, 2542, and 2521.

The non-wood office furniture industry (SIC code 2522) reported the second-largest amount of on-site recycling with 274,000 pounds. Drapery hardware and blinds and shades (SIC code 2591) reported the second-largest amount of on-site treatment with 349,000 pounds.

Figure 7-4 illustrates the distribution of on-site waste management reporting for the top industries in this sector.

Transfers Off-site for Further Waste Management

Recycling and energy recovery each accounted for more than 40% of the furniture sector's total transfers off-site for further waste management in 1996. The sector reported 6.5 million pounds transferred to recycling (49.4% of transfers for further waste management) and 5.6 million pounds of transfers to energy recovery (43.0%), as shown in Table 7-5.

Multiple-codes forms in SIC code 25 reported the largest transfers to recycling (3.2 million pounds) and transfers to energy recovery (3.6 million pounds). One facility reported transferring 1.9 million pounds of xylenes off-site to recycling. The facility that reported substantial on-site recycling of xylenes, noted above, also reported transferring 1.6 million pounds of this chemical to energy recovery.

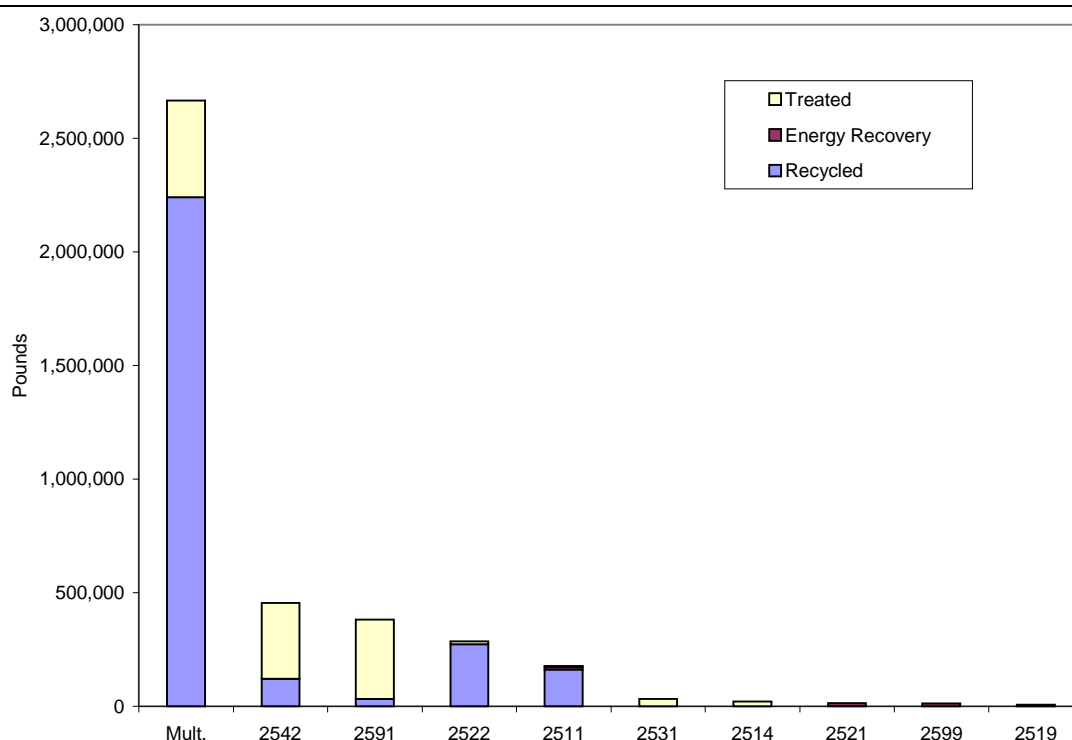


Figure 7-4. TRI Other On-site Waste Management, SIC Codes with Largest Totals, 1996: Furniture (SIC Code 25)

Note: Other On-site Waste Management from Section 8 of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the “multiple” category.

Table 7-5. TRI Transfers Off-site for Further Waste Management, 1996: Furniture, SIC Code 25 (in Rank Order)

SIC Code	Industry	Transfers to Recycling Pounds	Transfers to Energy Recovery Pounds	Transfers to Treatment Pounds	Transfers to POTWs Pounds	Other Off-site Transfers Pounds	Total Off-site Transfers for Further Waste Management Pounds
	Multiple within SIC Code 25	3,217,820	3,624,081	181,472	89,588	0	7,112,961
2511	Wood Household Furniture	410,287	1,209,346	99,267	28,668	0	1,747,568
2531	Public Building & Related Furniture	1,132,903	50,207	118,706	1,254	0	1,303,070
2542	Partitions & Fixtures, Except Wood	346,366	100,791	107,438	252,512	0	807,107
2522	Office Furniture, Except Wood	650,378	102,019	24,455	513	0	777,365
2521	Wood Office Furniture	405,048	151,436	30,953	50	0	587,487
2591	Drapery Hardware & Blinds & Shades	267,603	104,876	16,516	72	0	389,067
2599	Furniture & Fixtures, nec*	4,265	88,483	100	0	0	92,848
2512	Upholstered Household Furniture	2,031	62,684	987	10,825	0	76,527
2541	Wood Partitions & Fixtures	2,730	48,721	18,066	0	0	69,517
2514	Metal Household Furniture	195	56,297	1,202	0	0	57,694
2519	Household Furniture, nec*	8,652	12,500	0	0	0	21,152
2517	Wood TV & Radio Cabinets	5,602	1,300	1,000	20	0	7,922
2515	Mattresses & Bedspings	0	0	0	0	6,295	6,295
	Invalid SIC Code within SIC Code 25	0	0	1,000	0	0	1,000
	Total for SIC Code 25	6,453,880	5,612,741	601,162	383,502	6,295	13,057,580

Note: Off-site Transfers for Further Waste Management from Section 6 (excluding off-site transfers to disposal) of Form R. Other Off-site Transfers are transfers reported without a valid waste management code. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the “multiple” category.
 *nec: not elsewhere classified.

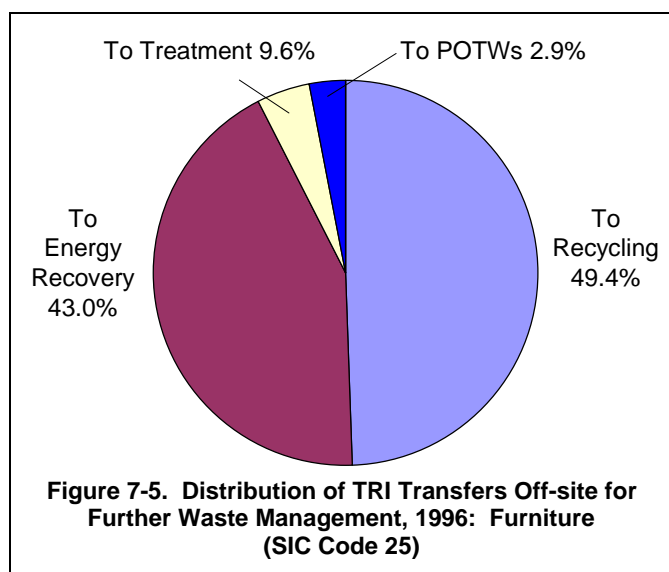


The public building and related furniture industry (SIC code 2531) ranked second for transfers to recycling with 1.1 million pounds. One facility reported 315,000 pounds of cobalt and 250,000 pounds of chromium; these were the largest transfers to recycling reported in SIC code 2531.

The wood household furniture industry (SIC code 2511) ranked second for transfers to energy recovery with 1.2 million pounds, including 487,000 pounds of toluene and 250,000 pounds of methanol.

Less than 8% of the sector's transfers for further waste management were reported as transfers to treatment (602,000 pounds) and POTWs (384,000 pounds). The multiple-codes group also reported the largest transfers to treatment (181,000 pounds). The non-wood partitions and fixtures industry (SIC code 2542) reported the largest transfers to POTWs (253,000 pounds).

Figure 7-5 illustrates the distribution of off-site transfers for further waste management by type. Figure 7-6 illustrates the distribution of such transfers for the top industries in this sector.



Note: Transfers Off-site for Further Waste Management from Section 6 (excluding transfers off-site to disposal) of Form R.

1996 TRI Data by State for Furniture

Table 7-6 presents 1996 summary TRI data for the furniture sector by state.

The furniture sector submitted more than 100 forms in each of three states: North Carolina with 279 forms, Virginia with 143, and Indiana with 110. These were also the states with the largest on-site releases and total releases. The furniture sector reported on-site releases and total releases of 8.6 million pounds (24.0% of the sector's total releases) in North Carolina, 5.9 million pounds (16.4%) in Virginia, and 3.0 million pounds (8.3%) in Indiana.

Georgia was the state with the largest reported off-site releases (transfers to disposal) with 79,000 pounds (62.7% of the total). Michigan was second with 26,000 pounds (20.5%), and South Carolina was third with 12,000 pounds (9.7%).

Michigan ranked first in the remaining categories. Two multiple-code facilities that reported sizable amounts of on-site recycling, transfers to recycling, and transfer to energy recovery are located in Michigan.

Other on-site waste management reported in Michigan totaled 2.6 million pounds (63.6% of the sector's total). Pennsylvania reported the second-largest total for other on-site waste management, with 438,000 pounds (10.8%). Illinois ranked third in this category with 320,000 pounds (7.9%).

For transfers off-site for further waste management, 5.6 million pounds was reported in Michigan. This was 42.8% of the furniture sector's reported transfers off-site for further waste management. Mississippi ranked second with 1.2 million pounds (9.2%). Wisconsin ranked third with 1.1 million pounds (8.3%).

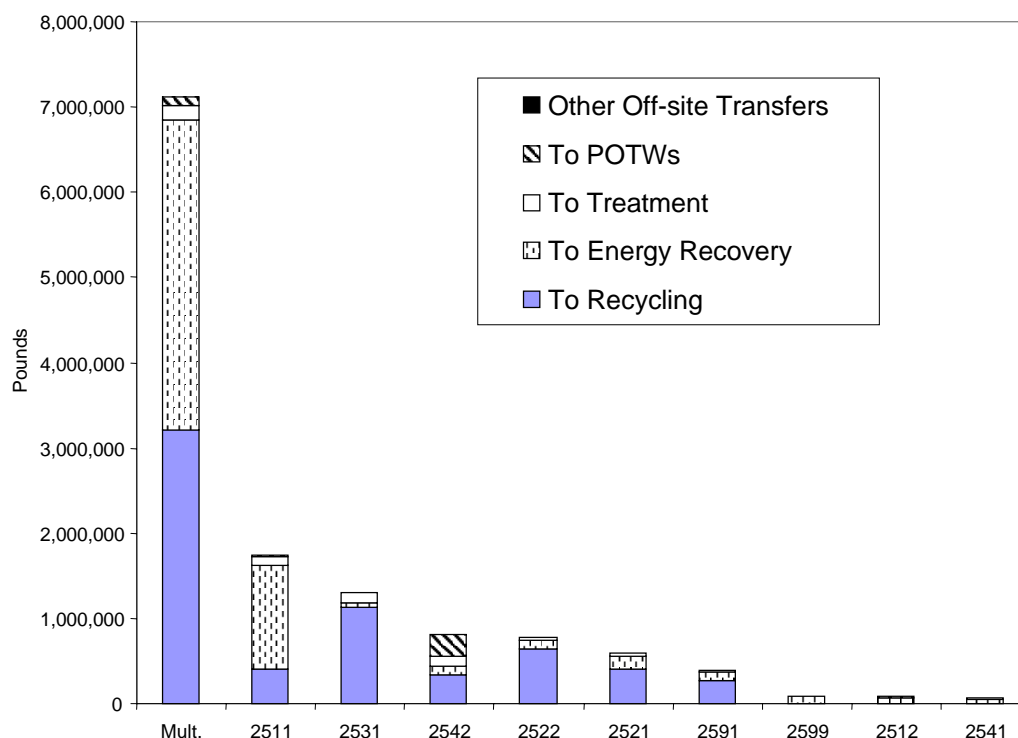


Figure 7-6. TRI Transfers Off-site for Further Waste Management, SIC Codes with Largest Totals, 1996: Furniture (SIC Code 25)

Note: Off-site Transfers for Further Waste Management from Section 6 (excluding off-site transfers to disposal) of Form R. Forms with more than one 4-digit SIC code within SIC Code 25 are assigned to the “multiple” category.

Michigan ranked first for production-related waste reporting 15.2 million pounds (26.3% of the sector’s total), followed by North Carolina with 8.7 million pounds (15.0%) and Virginia with 6.3 million pounds (10.9%).

Map 7-1 illustrates the geographic distribution of total on- and off-site releases in the furniture sector.

1996 TRI Data by Chemical for Furniture

Table 7-7 presents the 15 chemicals with the largest on- and off-site releases reported by the furniture sector. Releases of these chemicals totaled 35.7 million pounds in 1996, 99.5% of the

sector’s total releases. The sector reported 35.6 million pounds of air emissions of these 15 chemicals, 99.6% of total air emissions, and 107,000 pounds of off-site releases (transfers to disposal), 84.8% of total off-site releases.

Toluene was reported in the largest amount, 10.5 million pounds, followed by xylenes with 7.5 million pounds and methanol with 7.0 million pounds. These three chemicals made up 69.6% of the sector’s total on- and off-site releases in 1996. As mentioned early in this chapter, solvents such as these are used in many furniture coating applications. The wood household furniture industry (SIC code 2511) reported the largest air emissions of all three chemicals: 7.3 million pounds of toluene, 5.5 million pounds of methanol, and 3.9 million pounds of xylenes.



Chapter 7 — TRI Data for Furniture

Table 7-6. Summary of TRI Information by State, 1996: Furniture, SIC Code 25

State	Total Facilities Number	Total Forms Number	Form As Number	Total On-site Releases Pounds	Total Off-site Releases Pounds	Total On- and Off-site Releases Pounds	Total Other On-site Waste Management Pounds	Total Transfers Off-site for Further Waste Management Pounds	Total Production-related Waste Pounds	Non-Production-related Waste Pounds
Alabama	17	40	0	1,607,627	0	1,607,627	22,000	543,017	2,202,665	0
Arizona	3	6	0	105,788	0	105,788	0	11,378	117,166	0
Arkansas	17	58	0	1,334,996	2,400	1,337,396	50,390	407,374	1,792,367	0
California	20	38	4	607,683	250	607,933	0	267,791	827,227	0
Colorado	5	19	0	171,223	0	171,223	0	1,512	173,337	0
Connecticut	1	1	0	1,600	0	1,600	0	9,400	11,000	0
Delaware	1	2	0	33,000	0	33,000	0	20,005	53,000	0
Florida	7	16	0	658,383	1,500	659,883	0	57,973	715,190	0
Georgia	13	32	1	1,106,580	78,948	1,185,528	27,582	29,604	3,257,964	0
Idaho	1	9	5	47,200	0	47,200	0	93,100	139,550	0
Illinois	8	17	0	122,562	1,846	124,408	319,972	631,459	833,528	0
Indiana	39	110	13	2,963,110	0	2,963,110	17,235	205,791	3,243,743	0
Iowa	6	13	0	507,291	0	507,291	0	43,619	444,000	0
Kansas	1	3	0	62,741	0	62,741	0	0	62,741	0
Kentucky	10	22	0	360,242	441	360,683	0	205,499	556,712	40
Louisiana	1	2	0	12,739	0	12,739	0	47,777	47,778	0
Maine	1	2	0	22,662	0	22,662	0	0	24,662	0
Maryland	1	1	0	7,650	0	7,650	0	2,943	10,593	0
Massachusetts	5	7	0	96,038	0	96,038	0	2,506	98,694	0
Michigan	22	65	3	2,512,533	25,757	2,538,290	2,582,218	5,593,358	15,236,444	0
Minnesota	6	11	0	122,264	0	122,264	90,495	52,837	271,046	0
Mississippi	16	52	0	1,790,943	0	1,790,943	17,070	1,205,618	2,688,291	72
Missouri	11	20	0	440,374	5	440,379	969	17,110	457,387	20
Nebraska	2	10	0	415,581	0	415,581	5,600	43,067	181,303	0
New Hampshire	1	2	0	4,055	0	4,055	0	1,000	28,111	0
New Jersey	2	3	0	39,030	0	39,030	0	1,540	40,340	0
New York	11	22	0	348,525	250	348,775	1,181	41,401	324,549	0
North Carolina	90	279	0	8,609,476	250	8,609,726	56,806	690,842	8,696,256	15
Ohio	4	6	0	206,570	0	206,570	300	158,579	355,420	0
Oklahoma	2	6	0	102,917	0	102,917	0	40,863	154,137	0
Oregon	4	7	0	96,022	0	96,022	0	255	96,487	0
Pennsylvania	19	40	0	808,622	0	808,622	438,205	169,234	1,356,041	0
Puerto Rico	1	2	0	500	0	500	7,325	0	12,062	0
Rhode Island	1	1	0	9,600	0	9,600	0	750	10,140	0
South Carolina	4	20	0	651,422	12,251	663,673	24,976	53,306	741,088	0
Tennessee	23	67	0	2,114,100	0	2,114,100	32,774	696,295	2,863,615	0
Texas	10	26	0	569,684	0	569,684	4,346	215,742	779,756	0
Utah	5	10	0	85,151	0	85,151	194,753	23,021	302,920	0
Vermont	2	5	0	126,788	0	126,788	8,434	5,328	140,550	0
Virginia	38	143	0	5,868,592	0	5,868,592	81,580	370,707	6,293,178	0
Washington	3	4	0	41,092	1,948	43,040	0	5,005	45,707	0
West Virginia	1	2	0	32,343	0	32,242	0	5,634	37,876	0
Wisconsin	18	49	0	925,707	12	925,719	76,203	1,085,340	2,099,319	0
Total for SIC Code 25	453	1,250	26	35,750,805	125,858	35,876,663	4,060,414	13,057,580	57,823,940	148

Note: **On-site Releases** from Section 5 of Form R. **On-site Waste Management** from Section 8 of Form R. **Off-site Releases** from Section 6 (transfers off-site to disposal) of Form R. **Total Transfers Off-site for Further Waste Management** from Section 6 (excluding transfers off-site to disposal) of Form R. **Total Production-related Waste** sums Section 8 (Current Year, Column B) of Form R, except: **Non-production-related Waste** (remedial/catastrophic incidents).

Pounds

- More than 2,000,000
- 1,000,000 to 2,000,000
- 100,000 to 1,000,000
- 0 to 100,000

X = no reports



Table 7-7. The 15 Chemicals with the Largest Total On-site and Off-site Releases, 1996: Furniture, SIC Code 25 (in Rank Order)

CAS Number	Chemical	Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection		On-site Land Releases		Total On-site Releases Pounds	Off-site Releases Transfers Off-site to Disposal Pounds	Total On- and Off-site Releases Pounds
				Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
108-88-3	Toluene	10,498,072	5	0	0	0	404	10,498,481	21,344	10,519,825
1330-20-7	Xylene (mixed isomers)	7,441,280	8	0	0	0	605	7,441,893	16,252	7,458,145
67-56-1	Methanol	6,978,735	5	0	0	0	430	6,979,170	13,934	6,993,104
78-93-3	Methyl ethyl ketone	3,335,687	5	0	0	0	0	3,335,692	14,558	3,350,250
71-36-3	n-Butyl alcohol	1,984,495	5	0	0	0	0	1,984,500	1,844	1,986,344
108-10-1	Methyl isobutyl ketone	1,129,309	0	0	0	0	154	1,129,463	13,158	1,142,621
--	Glycol ethers	1,037,251	0	0	0	0	0	1,037,251	250	1,037,501
75-09-2	Dichloromethane	890,645	0	0	0	0	0	890,645	12,251	902,896
100-41-4	Ethylbenzene	823,752	0	0	0	0	250	824,002	13,158	837,160
95-63-6	1,2,4-Trimethylbenzene	735,992	0	0	0	0	0	735,992	0	735,992
110-54-3	n-Hexane	222,957	0	0	0	0	0	222,957	0	222,957
71-55-6	1,1,1-Trichloroethane	197,967	0	0	0	0	0	197,967	0	197,967
67-63-0	Isopropyl alcohol (manufacturing)	147,866	0	0	0	0	0	147,866	0	147,866
100-42-5	Styrene	76,860	0	0	0	0	0	76,860	0	76,860
50-00-0	Formaldehyde	73,852	0	0	0	0	0	73,852	0	73,852
	Subtotal	35,574,720	28	0	0	0	1,843	35,576,591	106,749	35,683,340
	Total for SIC Code 25	35,724,121	43	0	0	0	26,641	35,750,805	125,858	35,876,663

Note: On-site Releases from Section 5 of Form R. Off-site Releases from Section 6 (off-site transfers to disposal) of Form R.

OSHA Carcinogens

The furniture sector's releases of chemicals designated as OSHA carcinogens totaled 1.1 million pounds in 1996, as shown in Table 7-8. (OSHA carcinogens and the bases for their designation appear in Box 1-9 in Chapter 1.) This amounted to 3.2% of the sector's total releases. Air emissions of 1.1 million pounds represented 98.0% of total releases of the OSHA carcinogens.

Dichloromethane was the OSHA carcinogen with the largest releases reported in this sector, with 903,000 pounds. More than 50,000 pounds each was also reported for styrene (77,000 pounds), formaldehyde (74,000 pounds), and trichloroethylene (69,000 pounds). Three of these chemicals (dichloromethane, styrene, and formaldehyde) were among the top 15 chemicals for total releases reported by the furniture sector in 1996 (see Table 7-7).

The mattresses and bedsprings industry (SIC code 2515) reported the largest releases of OSHA carcinogens in the furniture sector, with 338,000

pounds. One facility in SIC code 2515 reported 337,000 pounds of dichloromethane, although this solvent and thinner was also reported in smaller amounts in numerous furniture industries. Ranking second for releases of these chemicals, the non-wood partitions and fixtures industry (SIC code 2542) reported 155,000 pounds. Multiple-codes forms reported 152,000 pounds of releases and ranked third.

Figure 7-7 shows the on- and off-site releases of the four-digit SIC codes with the largest OSHA carcinogen releases.

1996 TRI Chemicals in Waste for Furniture

In 1996, the furniture sector reported production-related waste totaling 57.8 million pounds. The majority of this reporting consisted of quantities released on- and off-site, 42.2 million pounds, or 73.0% of the sector's production-related waste. The next largest categories were off-site energy



Table 7-8. TRI On-site and Off-site Releases of OSHA Carcinogens by 4-digit SIC Code, 1996: Furniture, SIC Code 25 (in Rank Order)

SIC Code	Industry	Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection		On-site Land Releases		Total On-site Releases Pounds	Off-site Releases Transfers Off-site to Disposal Pounds	Total On- and Off-site Releases Pounds
				Class I Wells Pounds	Class II-V Wells Pounds	RCRA Subtitle C Landfills Pounds	Other On-site Land Releases Pounds			
2515	Mattresses & Bedsprings	337,599	0	0	0	0	0	337,599	0	337,599
2542	Partitions & Fixtures, Except Wood	154,930	10	0	0	0	0	154,940	8	154,557
	Multiple within SIC Code 25	143,262	0	0	0	0	8,288	151,550	7	151,557
2522	Office Furniture, Except Wood	137,799	0	0	0	0	0	137,799	0	137,799
2531	Public Building & Related Furniture	81,912	0	0	0	0	5	81,917	1,900	83,817
2511	Wood Household Furniture	62,210	0	0	0	0	0	62,210	12,251	74,461
2512	Upholstered Household Furniture	63,900	0	0	0	0	0	63,900	0	63,900
2521	Wood Office Furniture	45,434	0	0	0	0	0	45,434	0	45,434
2541	Wood Partitions & Fixtures	44,810	0	0	0	0	0	44,810	0	44,810
2519	Household Furniture, nec*	29,762	0	0	0	0	0	29,762	0	29,762
2599	Furniture & Fixtures, nec*	9,089	0	0	0	0	0	9,089	0	9,089
	Invalid SIC Code within SIC Code 25	6,050	0	0	0	0	0	6,050	0	6,050
	Subtotal	1,116,757	10	0	0	0	8,293	1,125,060	14,166	1,139,226
	Total for SIC Code 25	35,724,121	43	0	0	0	26,641	35,750,805	125,858	35,876,663

Note: On-site Releases from Section 5 of Form R. Off-site Releases from Section 6 (off-site transfers to disposal) of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.

*nec: not elsewhere classified.

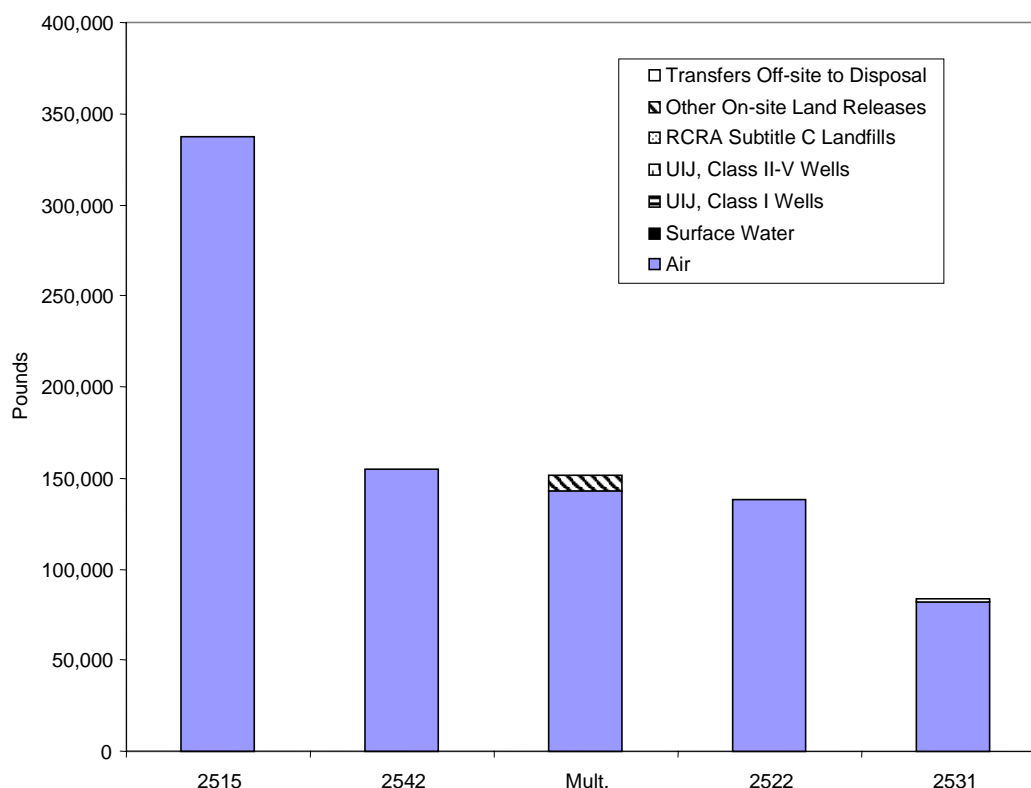


Figure 7-7. TRI On-site and Off-site Releases of OSHA Carcinogens, SIC Codes with Largest Totals, 1996: Furniture (SIC Code 25)

Note: On-site Releases from Section 5 of Form R. Off-site Releases from Section 6 (off-site transfers to disposal) of Form R. UIJ = underground injection. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.



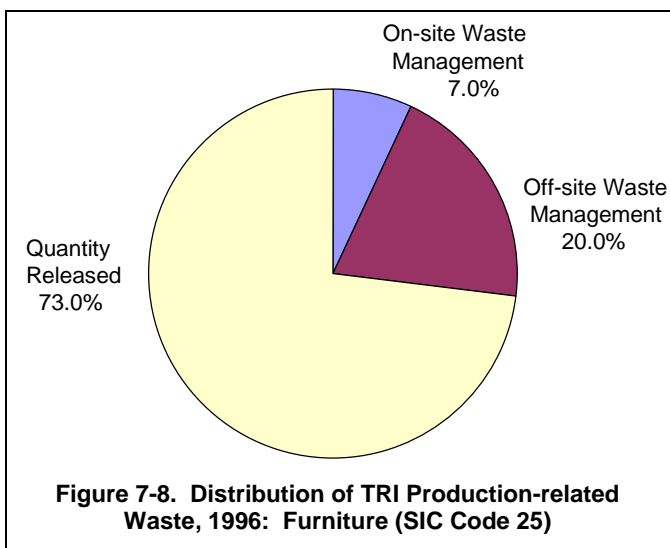
Chapter 7 — TRI Data for Furniture

Table 7-9. Quantities of TRI Chemicals in Waste by 4-digit SIC Code, 1996: Furniture, SIC Code 25 (in Rank Order)

SIC Code	Industry	Recycled On-site Pounds	Energy Recovery On-site Pounds	Treated On-site Pounds	Recycled Off-site Pounds	Energy Recovery Off-site Pounds	Treated Off-site Pounds	Quantity Released On- and Off-site Pounds	Total Production-related Waste Pounds	Non-Production-related Waste Pounds
2511	Wood Household Furniture	161,450	12,080	3,147	445,301	1,216,048	233,647	23,351,616	25,423,289	20
	Multiple within SIC Code 25	2,240,579	0	426,721	1,900,005	3,622,093	265,949	10,822,289	19,177,636	15
2521	Wood Office Furniture	689	13,595	0	404,805	155,583	56,669	2,131,341	2,762,682	0
2522	Office Furniture, Except Wood	273,527	0	13,156	597,595	102,019	24,208	1,241,761	2,252,266	0
2531	Public Building & Related Furniture	0	0	31,012	1,130,233	53,376	118,481	703,249	2,036,351	40
2542	Partitions & Fixtures, Except Wood	121,200	0	333,634	342,514	153,364	57,467	824,536	1,832,715	0
2591	Draperies Hardware & Blinds & Shades	32,168	0	348,960	267,603	104,954	16,563	333,622	1,103,870	0
2512	Upholstered Household Furniture	2,005	0	0	2,830	49,848	11,916	721,483	788,082	0
2599	Furniture & Fixtures, nec*	0	11,792	0	4,265	81,086	150	628,316	725,609	0
2519	Household Furniture, nec*	3,895	0	3,430	11,193	12,500	4,055	519,622	554,735	1
2541	Wood Partitions & Fixtures	6,404	0	0	3,332	50,717	13,572	445,254	519,279	0
2514	Metal Household Furniture	0	0	20,970	195	43,559	1,202	269,489	335,415	0
2517	Wood TV & Radio Cabinets	0	0	0	5,618	2,100	1,108	192,575	201,401	0
	Invalid SIC Code within SIC Code 25	0	0	0	0	0	610	10,000	10,610	0
2515	Mattresses & Bedsprings	0	0	0	0	0	0	0	0	72
	Total for SIC Code 25	2,841,917	37,467	1,181,030	5,115,489	5,647,247	805,597	42,195,193	57,823,940	148

Note: Data from Section 8 of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the “multiple” category. One facility incorrectly reported 0 pounds of total production-related waste under SIC code 2515. The correct amount is 370,695 pounds. The total production-related waste rank of SIC code 2515 changes from 15 to 12.

*nec: not elsewhere classified.



Note: Data from Section 8 of Form R.

recovery, 5.6 million pounds (9.8%) and off-site recycling, 5.1 million pounds (8.8%). Other waste management types accounted for less than 5% each of total production-related waste. These data appear in Table 7-9, and Figure 7-8 illustrates the percentage distribution.

Two industrial groups accounted for the largest reported quantities released by this sector: wood household furniture (SIC code 2511), with 23.4

million pounds, and multiple-codes forms with 10.8 million pounds. These two amounts together accounted for 81.0% of the sector’s reported release quantities and 59.1% of the sector’s total production-related waste. Zero amounts reported by the mattresses and bedsprings industry (SIC code 2515), shown in Table 7-9, represent a reporting error. As seen in Tables 7-1 and 7-8, this industry reported 338,000 pounds of releases in Section 5 of Form R for 1996, which should also have been reported as quantities released on- and off-site in Section 8 of Form R.

The multiple-codes group reported the largest amounts in all other types of waste management except on-site energy recovery. (The furniture sector as a whole reported only small amounts of toxic chemicals burned for energy recovery on-site.). Multiple-codes forms reported 2.2 million pounds of on-site recycling, 427,000 pounds of on-site treatment, 1.9 million pounds of off-site recycling, 3.6 million pounds of off-site energy recovery, and 266,000 pounds of off-site treatment. These amounts ranged from 33.0% (off-site treatment) to 78.8% (on-site recycling) of the sector’s total in each of the various categories.

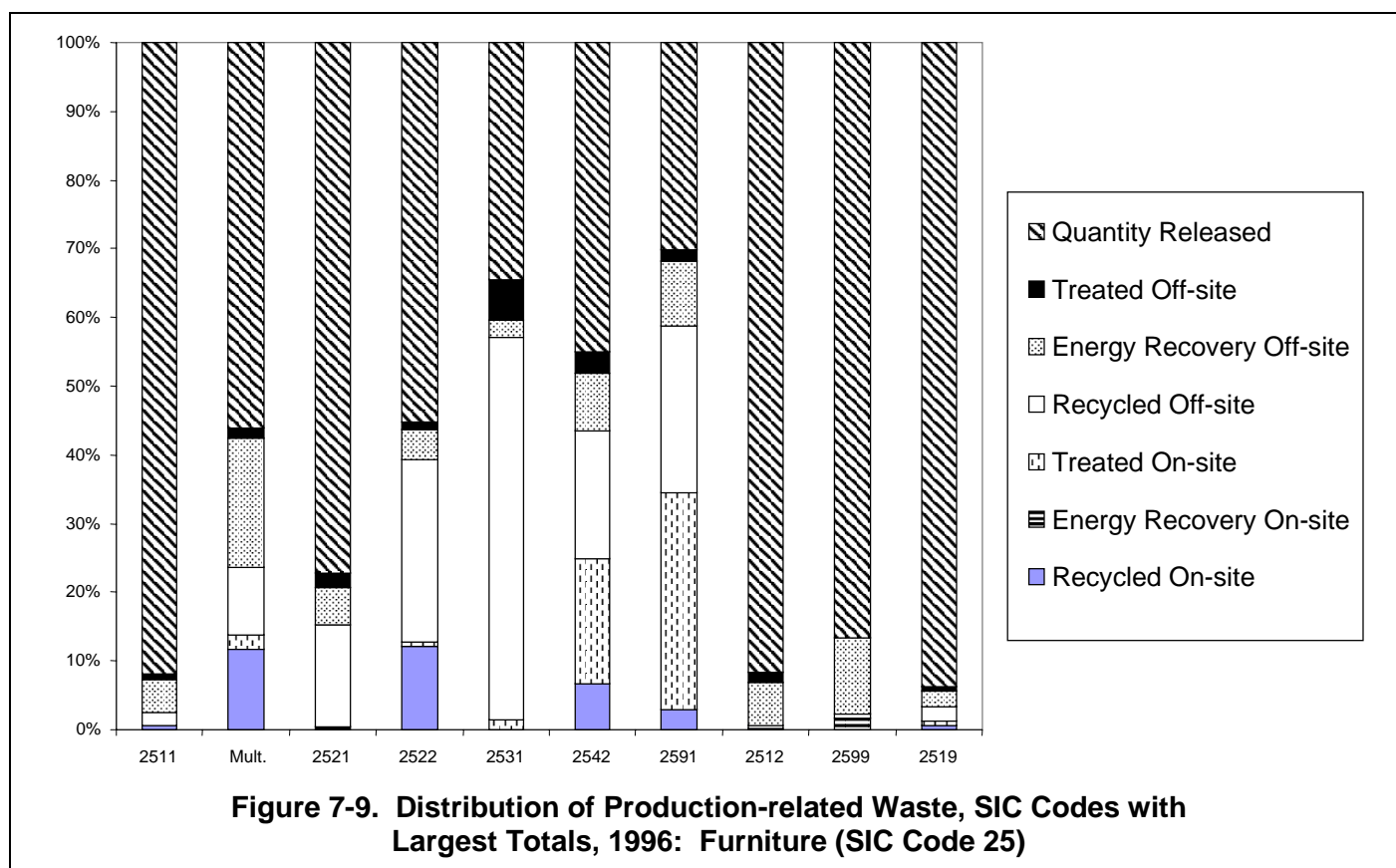


The non-wood office furniture industry (SIC code 2522) ranked second for on-site recycling, with 274,000 pounds (9.6% of the sector's total for on-site recycling). Drapery hardware and blinds and shades (SIC code 2591) reported the second-largest amount for on-site treatment, 349,000 pounds (29.5%). The public building and related furniture industry (SIC code 2531) ranked second for off-site recycling, with 1.1 million pounds (22.1%). The wood household furniture industry (SIC code 2511) was second for off-site energy recovery, with 1.2 million pounds (21.5%), and for off-site treatment, with 234,000 pounds (29.0%).

Distribution of production-related waste for the top industries in the sector appears in Figure 7-9.

Projected Quantities of TRI Chemicals in Waste

Table 7-10 and Figure 7-10 summarize the furniture sector's projections for on- and off-site waste management through 1998. (As explained in Chapter 1, facilities not only report current data but project waste management quantities for the next two years in their TRI submissions.) Total production-related waste was expected to decline 4.2% from 1996 to 1998, from 57.8 million pounds to 55.4 million pounds. The largest component of this sector's reported production-related waste—quantities released on- and off-site—was projected to decrease 4.6%, from 42.2 million pounds to 40.3 million pounds. These projected reductions would amount to a 2.4 million-pound decrease in total production-



Note: Data from Section 8 of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.



Chapter 7 — TRI Data for Furniture

Table 7-10. Current Year and Projected Quantities of TRI Chemicals in Waste, 1996-1998: Furniture, SIC Code 25

Waste Management Activity	Current Year 1996		Projected 1997		Projected 1998	
	Total Pounds	Percent of Total	Total Pounds	Percent of Total	Total Pounds	Percent of Total
<u>On-site Waste Management</u>						
Recycled On-site	2,841,917	4.9	2,662,976	4.8	2,672,601	4.8
Energy Recovery On-site	37,467	0.1	144,010	0.3	143,101	0.3
Treated On-site	1,181,030	2.0	1,183,940	2.1	1,207,393	2.2
<u>Off-site Waste Management</u>						
Recycled Off-site	5,115,489	8.8	4,523,551	8.2	4,848,379	8.7
Energy Recovery Off-site	5,647,247	9.8	5,176,598	9.4	5,417,144	9.8
Treated Off-site	805,597	1.4	876,297	1.6	875,121	1.6
Quantity Released On- and Off-site	42,195,193	73.0	40,718,754	73.7	40,251,945	72.6
Total Production-related Waste for SIC Code 25	57,823,940	100.0	55,286,126	100.0	55,415,684	100.0

Waste Management Activity	Projected Change	Projected Change	Projected Change
	1996-1997 Percent	1997-1998 Percent	1996-1998 Percent
<u>On-site Waste Management</u>			
Recycled On-site	-6.3	0.4	-6.0
Energy Recovery On-site	284.4	-0.6	281.9
Treated On-site	0.2	2.0	2.2
<u>Off-site Waste Management</u>			
Recycled Off-site	-11.6	7.2	-5.2
Energy Recovery Off-site	-8.3	4.6	-4.1
Treated Off-site	8.8	-0.1	8.6
Quantity Released On- and Off-site	-3.5	-1.1	-4.6
Total Production-related Waste for SIC Code 25	-4.4	0.2	-4.2

Note: Current year and projected year amounts are all taken from Section 8 of Form R for 1996.

related waste, including a 1.9 million-pound decrease in quantities released.

The sector also projected reductions of 6.0% in on-site recycling, 5.2% in off-site recycling, and 4.1% in off-site energy recovery. The absolute decrease in each of these cases would be less than 300,000 pounds.

Relatively small absolute increases were projected in on-site energy recovery (106,000 pounds), on-site treatment (26,000 pounds), and off-site treatment (70,000 pounds).

These projections indicate no change in the way the furniture sector planned to manage its TRI chemicals in waste. Despite the large absolute decrease projected for releases, that category would continue to account for approximately 73% of the

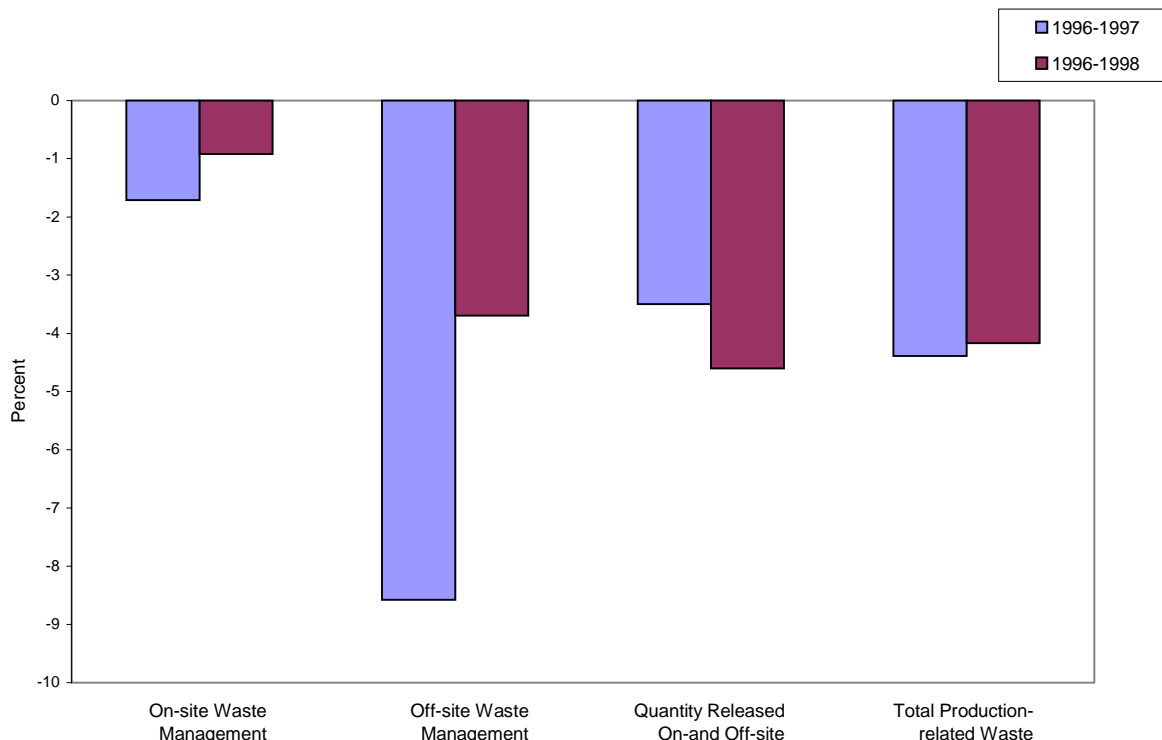


Figure 7-10. Projected Percentage Change in Quantities of TRI Chemicals in Waste, 1996-1998: Furniture (SIC Code 25)

Note: Current year and projected year amounts are all taken from Section 8 of Form R for 1996.

sector's production-related waste. As explained in Chapter 1, releases are the least desirable option for managing TRI chemicals in waste, according to the waste management hierarchy.

Source Reduction Activity

A relatively high percentage of the TRI forms submitted by the furniture sector—37.8%—indicated that one or more source reduction activities were undertaken during 1996. For TRI as a whole, 19.6% of all forms reported source reduction activity. As shown in Table 7-11, the furniture sector submitted 472 forms that reported source reduction activity. The wood household furniture industry (SIC code 2511) submitted the largest number, 279 forms or 44.3% of all TRI reports filed by that industry. Among the multiple-codes forms, 79 (or 47.0%) indicated source reduction activity. The level of source reduction activity represented by these high

percentages, in the industry groups that reported the largest amounts of releases and waste management in this sector, suggests that efforts are underway to reduce those amounts.

Surface preparation and finishing was the category of source reduction activity most often reported (on 235 forms), reflecting the importance of these activities in furniture manufacture. Raw material modifications was second (177 forms), and good operating practices was third (112 forms).

Year-to-Year Comparisons for Furniture

1995-1996 TRI Data for Furniture

From 1995 to 1996, the number of forms submitted to TRI by the furniture sector decreased 16.0%, from 1,488 forms to 1,250, as shown in Table 7-12.



Chapter 7 — TRI Data for Furniture

Table 7-11. Number of Forms Reporting Source Reduction Activity, 1996: Furniture, SIC Code 25

SIC Code	Industry	Total Forms Number	Forms Reporting Source Reduction Activities		Category of Source Reduction Activity							
			Number	Percent of All Forms Percent	Good Operating Practices Number	Inventory Control Number	Spill and Leak Prevention Number	Raw Material Modifications Number	Process Modifications Number	Cleaning and Degreasing Number	Surface Preparation and Finishing Number	Product Modifications Number
2511	Wood Household Furniture	630	279	44.3	58	36	25	105	21	5	139	7
2512	Upholstered Household Furniture	38	3	7.9	0	0	0	2	1	0	0	0
2514	Metal Household Furniture	17	1	5.9	1	0	0	0	1	0	0	0
2515	Mattresses & Bedspings	3	0	0.0	0	0	0	0	0	0	0	0
2517	Wood TV & Radio Cabinets	8	2	25.0	0	0	0	2	0	0	0	0
2519	Household Furniture, nec*	21	2	9.5	1	0	0	2	0	0	0	0
2521	Wood Office Furniture	95	33	34.7	8	1	0	13	1	2	20	0
2522	Office Furniture, Except Wood	65	18	27.7	6	3	1	5	5	2	8	2
2531	Public Building & Related Furniture	53	3	5.7	1	0	0	0	1	0	0	1
2541	Wood Partitions & Fixtures	31	15	48.4	7	0	0	4	0	0	8	2
2542	Partitions & Fixtures, Except Wood	48	15	31.3	5	3	2	4	2	0	8	2
2591	Drapery Hardware & Blinds & Shades	24	6	25.0	2	0	0	2	1	0	1	0
2599	Furniture & Fixtures, nec*	47	16	34.0	4	1	2	3	2	1	9	0
	Multiple within SIC Code 25	168	79	47.0	19	0	2	35	9	5	42	6
	Invalid SIC Code within SIC Code 25	2	0	0.0	0	0	0	0	0	0	0	0
	Total for SIC Code 25	1,250	472	37.8	112	44	32	177	44	15	235	20

Note: Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.

*nec: not elsewhere classified.

Although very few Form As were submitted in this sector in either year, these also decreased by a substantial margin (35.0%), from 40 to 26. (The Form A certification statement is explained in Chapter 1.)

On- and Off-site Releases

Releases on- and off-site reported by the furniture sector decreased 14.1%, from 41.8 million pounds in 1995 to 35.9 million pounds in 1996. The largest component of the reduction was air emissions, which decreased from 41.7 million pounds to 35.7 million pounds (14.3%). Both fugitive and point-source emissions decreased. Other types of releases constituted less than 1% of the furniture sector's total on- and off-site releases, and were not significant elements of the 1995-1996 change.

Table 7-12 presents the furniture sector's on- and off-site releases for 1995 and 1996. Figure 7-11 illustrates the percentage change in releases by type.

Other On-site Waste Management

All types of other on-site waste management reported by the furniture sector decreased from 1995 to 1996, as shown in Table 7-12. The sector reported a 16.2% reduction, from 4.8 million pounds to 4.1 million pounds in total other on-site waste management. Contributing to this overall decrease was a reduction in on-site recycling from 3.4 million pounds to 2.8 million pounds and a reduction in on-site treatment from 1.4 million pounds to 1.2 million pounds. Energy recovery, the on-site waste management option with the smallest amounts reported by this sector, decreased from 94,000 pounds to 37,000 pounds.

Transfers Off-site for Further Waste Management

Table 7-12 also shows the furniture sector's 1995 and 1996 reporting of transfers off-site for further waste management. The total of such transfers decreased 8.3% from 14.2 million pounds to 13.1 million



Table 7-12. Comparison of TRI On-site and Off-site Releases, Other On-site Waste Management, and Transfers Off-site for Further Waste Management, 1995-1996: Furniture, SIC Code 25

	1995 Number	1996 Number	Change 1995 to 1996 Percent
Total Facilities	524	453	-13.5
Total Forms	1,488	1,250	-16.0
Form Rs	1,448	1,224	-15.5
Form As	40	26	-35.0
	Pounds	Pounds	Percent
<u>On-site Releases</u>			
Total Air Emissions	41,662,290	35,724,121	-14.3
Fugitive Air	5,867,608	4,813,779	-18.0
Point Source Air	35,794,682	30,910,342	-13.6
Surface Water Discharges	872	43	-95.1
Underground Injection	0	0	--
On-site Land Releases	9,608	26,641	177.3
Total On-site Releases	41,672,770	35,750,805	-14.2
<u>Off-site Releases</u>			
Transfers Off-site to Disposal	107,119	125,858	17.5
Total On- and Off-site Releases	41,779,889	35,876,663	-14.1
<u>Other On-site Waste Management</u>			
Recycled On-site	3,394,403	2,841,917	-16.3
Energy Recovery On-site	94,077	37,467	-60.2
Treated On-site	1,356,904	1,181,030	-13.0
Total Other On-site Waste Management	4,845,384	4,060,414	-16.2
<u>Transfers Off-site for Further Waste Management</u>			
Transfers to Recycling	6,340,055	6,453,880	1.8
Transfers to Energy Recovery	6,982,200	5,612,741	-19.6
Transfers to Treatment	798,575	601,162	-24.7
Transfers to POTWs	122,438	383,502	213.2
Other Off-site Transfers	250	6,295	2,418.0
Total Transfers Off-site for Further Waste Management	14,243,518	13,057,580	-8.3

Note: **On-site Releases** from Section 5 of Form R and **Off-site Releases** from Section 6 (transfers off-site to disposal) of Form R. **Other On-site Waste Management** from Section 8 of Form R. **Transfers Off-site for Further Waste Management** from Section 6 (excluding transfers off-site to disposal) of Form R. Breakdown of Underground Injection and On-site Land Releases not required in 1995. Other Off-site Transfers are transfers reported without a valid waste management code.

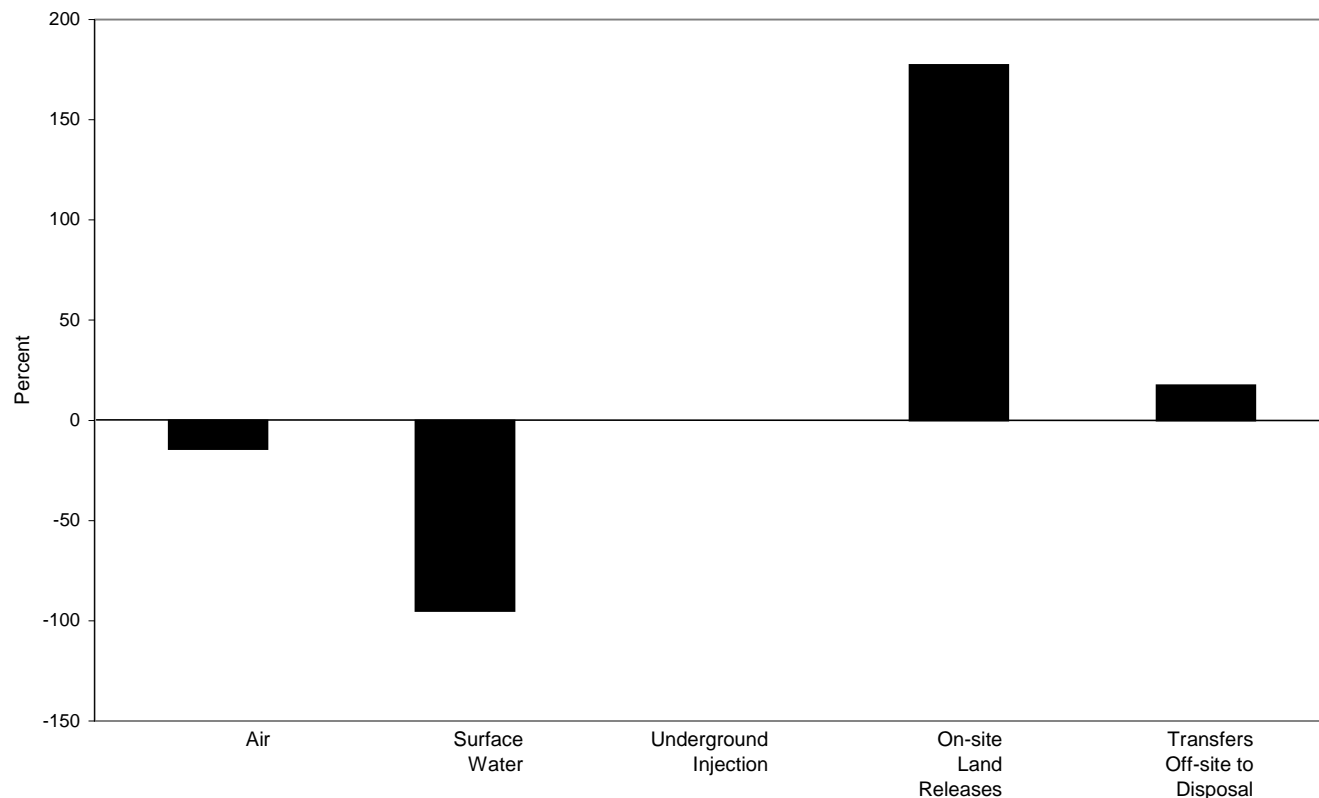


Figure 7-11. Percentage Change in On-site and Off-site Releases, 1995-1996: Furniture (SIC Code 25)

Note: On-site Releases from Section 5 of Form R and Off-site Releases from Section 6 (transfers off-site to disposal) of Form R. Breakdown of Underground Injection and On-site Land Releases not required in 1995.

pounds. This reduction was principally attributable to a reduction in transfers to energy recovery from 7.0 million pounds in 1995 to 5.6 million pounds in 1996, a 19.6% decrease. Transfers to treatment also decreased, from 799,000 pounds to 601,000 pounds, while transfers to recycling increased from 6.3 million pounds to 6.5 million pounds and transfers to POTWs increased from 122,000 pounds to 384,000 pounds.

Changes in SIC Codes

As indicated in facility descriptions below, some facilities report different SIC codes over time. This may reflect new or discontinued lines of production, or it may represent a different understanding of how SIC code designations

relate to a facility's business activities. These changes can contribute—sometimes largely—to apparent increases or decreases across comparison years in the amounts reported by the four-digit, or even two-digit, SIC codes.

1988-1996 TRI Data for Furniture

As explained in Chapter 1, comparisons from the 1988 TRI baseline year to the current year rely on the list of “core” TRI chemicals that were reportable, with the same reporting definition, in all years. These multi-year comparisons also review only the data elements that were collected in all years, which excludes from this section any analysis that distinguishes RCRA subtitle C landfills from other land releases as well as analysis based on the types of underground injection wells. On-site waste



management data and transfers off-site to recycling and to energy recovery have been collected only since 1991; these data are included, but cannot be compared across the full 1988-1996 period.

The number of forms submitted by the furniture sector decreased by 25.8% from 1988 to 1996 (from 1,630 forms to 1,209 forms), as shown in Table 7-13.

For the 1988-1996 “core” chemicals, the furniture sector reported 62.4 million pounds of total on- and off-site releases in 1988 and 35.7 million pounds in 1996. This was a reduction of 42.8% or 26.7 million pounds. The reduction in air emissions over this period was 25.8 million pounds (from 61.3 million pounds in 1988 to 35.5 million pounds in 1996), including reductions in both fugitive and point-source releases to air. The sector also recorded an 848,000 pound reduction in off-site releases (transfers to disposal), from 974,000 pounds to 126,000 pounds.

Figure 7-12 displays the percentage change in on- and off-site releases by type of release for the furniture sector.

On-site waste management and transfers off-site for recycling or energy recovery were not collected in 1988. For the 1994-1996 period, other on-site waste management reported by the furniture sector increased from 2.8 million pounds in 1994 to 3.7 million pounds in 1996, as shown in Table 7-13. This reflected a larger increase in on-site recycling (from 1.7 million pounds to 2.8 million pounds), partly offset by smaller decreases in energy recovery (from 173,000 pounds to 37,000 pounds) and treatment (from 997,000 pounds to 840,000 pounds).

For the types of transfers reported to TRI for the full 1988-1996 comparison period, the furniture

sector reported an 83.8% reduction in transfers to treatment (from 3.7 million pounds to 599,000 pounds) and a 57.9% reduction in transfers to POTWs (from 250,000 pounds to 105,000 pounds). These data also appear in Table 7-13.

1988-1996 Data for Four-Digit Industries in Furniture

Tables 7-14 through 7-16 summarize data for 1988 and 1994-1996 for industries at the four-digit SIC code level within SIC code 25. The tables present, respectively, on- and off-site releases, other on-site waste management, and transfers off-site for further waste management.

On- and Off-site Releases

Table 7-14 provides release data for all four-digit SIC codes in the furniture sector, for 1988-1996. The wood household furniture industry (SIC code 2511) reported the largest decrease in total on- and off-site releases, from 38.1 million pounds in 1988 to 22.1 million pounds in 1996. The non-wood office furniture industry (SIC code 2522) ranked second for decreases in releases, reporting 3.2 million pounds in 1988 and 1.2 million pounds in 1996. The third-largest decrease was reported by the public building and related furniture industry (SIC code 2531), from 2.5 million pounds to 690,000 pounds. All three reductions occurred largely in reporting of air emissions.

The mattresses and bedsprings industry (SIC code 2515) reported the largest increase in releases for the 1988-to-1996 period, from 30,000 pounds to 337,000 pounds, entirely in air emissions. The only other industry reporting an increase was the miscellaneous household furniture (SIC code 2519), from 431,000 pounds to 507,000 pounds. Releases reported in both industries were considerably higher in 1994, but decreased in 1995 and 1996. The overall increase was primarily attributable to air emissions.



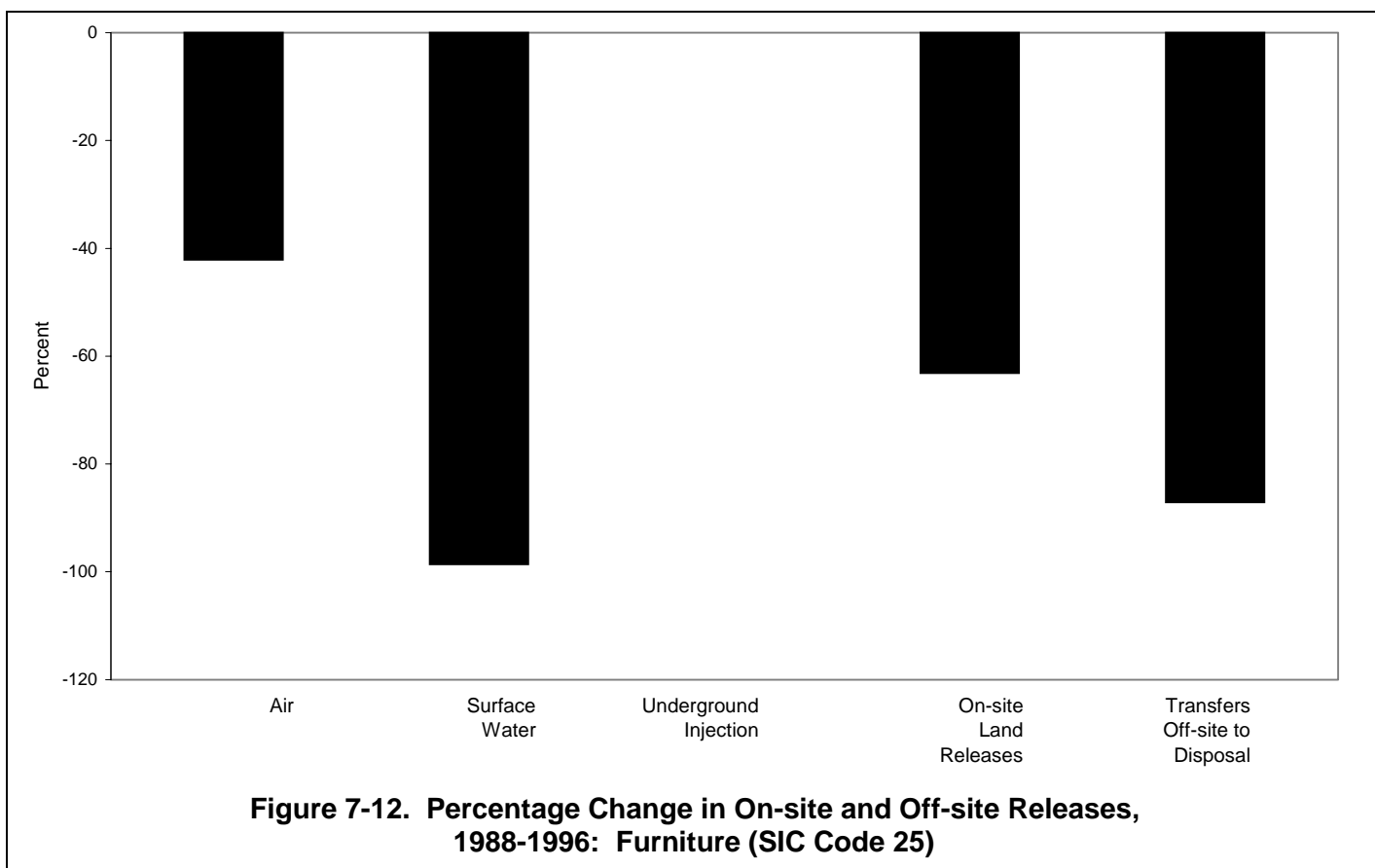
Chapter 7 — TRI Data for Furniture

Table 7-13. Comparison of TRI On-site and Off-site Releases, Other On-site Waste Management, and Transfers Off-site for Further Waste Management, 1988 and 1994-1996: Furniture, SIC Code 25

	1988 Number	1994 Number	1995 Number	1996 Number	Change 1988 to 1996 Percent
Total Facilities	500	562	522	446	-10.8
Total Forms	1,630	1,604	1,446	1,209	-25.8
Form Rs	1,630	1,604	1,413	1,191	-26.9
Form As	NA	NA	33	18	NA
	Pounds	Pounds	Pounds	Pounds	Percent
<u>On-site Releases</u>					
Total Air Emissions	61,313,783	51,786,463	41,412,706	35,499,005	-42.1
Fugitive Air	8,556,134	6,469,770	5,786,731	4,717,964	-44.9
Point Source Air	52,757,649	45,316,693	35,625,975	30,781,041	-41.7
Surface Water Discharges	3,051	266	872	43	-98.6
Underground Injection	0	0	0	0	--
On-site Land Releases	72,249	63,717	9,603	26,636	-63.1
Total On-site Releases	61,389,083	51,850,446	41,423,181	35,525,684	-42.1
<u>Off-site Releases</u>					
Transfers Off-site to Disposal	974,037	284,499	107,119	125,857	-87.1
Total On- and Off-site Releases	62,363,120	52,134,945	41,530,300	35,651,541	-42.8
<u>Other On-site Waste Management</u>					
Recycled On-site	NA	1,650,599	3,354,403	2,806,917	NA
Energy Recovery On-site	NA	172,607	94,077	37,467	NA
Treated On-site	NA	996,921	985,333	840,182	NA
Total Other On-site Waste Management	NA	2,820,127	4,433,813	3,684,566	NA
<u>Transfers Off-site for Further Waste Management</u>					
Transfers to Recycling	NA	4,201,644	6,340,055	6,453,880	NA
Transfers to Energy Recovery	NA	6,388,993	6,943,916	5,544,138	NA
Transfers to Treatment	3,706,391	1,741,230	789,922	598,945	-83.8
Transfers to POTWs	250,472	134,380	122,428	105,448	-57.9
Other Off-site Transfers	1,143,394	5,772	250	6,295	-99.4
Total Transfers Off-site for Further Waste Management	NA	12,472,019	14,196,571	12,708,706	NA

Note: Does not include delisted chemicals, chemicals added in 1990, 1991, 1994, and 1995, and aluminum oxide, ammonia, hydrochloric acid, and sulfuric acid.

On-site Releases from Section 5 of Form R and **Off-site Releases** from Section 6 (transfers off-site to disposal) of Form R. **Other On-site Waste Management** from Section 8 of Form R. **Transfers Off-site for Further Waste Management** from Section 6 (excluding transfers off-site to disposal) of Form R. Breakdown of Underground Injection and On-site Land Releases not required before 1996. For 1994-1996, Other Off-site Transfers are transfers reported without a valid waste management code. For 1988, Other Off-site Transfers are transfers reported without a valid waste management code or codes not required to be reported in 1988. **NA:** not required to be reported in that year.



Note: Does not include delisted chemicals, chemicals added in 1990, 1991, 1994, and 1995, and aluminum oxide, ammonia, hydrochloric acid, and sulfuric acid. **On-site Releases** from Section 5 of Form R and **Off-site Releases** from Section 6 (transfers off-site to disposal) of Form R. Breakdown of Underground Injection and On-site Land Releases not required before 1996.

Other On-site Waste Management

The drapery hardware and blinds and shades industry (SIC code 2591) reported the largest decrease in other on-site waste management in the furniture sector for 1994 to 1996 (on-site waste management data were not collected in 1988). This was a reduction from 586,000 pounds to 381,000 pounds, although this industry's total other on-site waste management was higher (652,000 pounds) in 1995. The industry reported reductions in all waste management methods except for a small increase in on-site recycling.

The miscellaneous furniture and fixtures industry (SIC code 2599) ranked second for decreases, reporting 77,000 pounds in 1994 and 12,000 pounds in 1996. The public building and related

furniture industry (SIC code 2531) reported the third-largest decrease, from 81,000 pounds to 31,000 pounds. In both industries, the reductions reflected decreased reporting in on-site recycling and treatment.

The largest increase from 1994 to 1996 was reported by the multiple-codes group, from 1.4 million pounds to 2.6 million pounds. This increase was reported principally in on-site recycling. The non-wood partitions and fixtures industry (SIC code 2542) ranked second, increasing from 116,000 pounds to 194,000 pounds. The increase was attributable to treatment and recycling. Non-wood office furniture (SIC code 2522) ranked third, reporting 263,000 pounds in 1994 and 287,000 pounds in 1996. This increase reflected an increase in on-site recycling, partly offset by a decrease in on-site treatment.



Chapter 7 — TRI Data for Furniture

Table 7-14. TRI On-site and Off-site Releases by 4-digit SIC Code, 1988 and 1994-1996: Furniture, SIC Code 25

SIC Code	Industry	Year	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
			Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
2511	Wood Household Furniture	96	22,057,768	25	0	1,093	22,058,886	91,199	22,150,085
		95	26,173,314	780	0	1,632	26,175,726	84,074	26,259,800
		94	32,176,694	30	0	61,631	32,238,355	173,505	32,411,860
		88	37,550,473	1,000	0	43,574	37,595,047	512,180	38,107,227
2512	Upholstered Household Furniture	96	783,320	0	0	0	783,320	0	783,320
		95	776,874	0	0	500	777,374	0	777,374
		94	867,981	0	0	0	867,981	250	868,231
		88	2,540,446	0	0	0	2,540,446	3,750	2,544,196
2514	Metal Household Furniture	96	269,490	0	0	0	269,490	0	269,490
		95	283,949	0	0	0	283,949	0	283,949
		94	709,128	0	0	68	709,196	14,436	723,632
		88	795,886	0	0	0	795,886	4,150	800,036
2515	Mattresses & Bedsprings	96	337,486	0	0	0	337,486	0	337,486
		95	400,917	0	0	0	400,917	0	400,917
		94	435,233	0	0	0	435,233	250	435,483
		88	29,600	0	0	0	29,600	0	29,600
2517	Wood TV & Radio Cabinets	96	193,575	0	0	0	193,575	0	193,575
		95	414,400	0	0	0	414,400	0	414,400
		94	674,260	0	0	0	674,260	0	674,260
		88	1,371,204	0	0	0	1,371,204	20,737	1,391,941
2519	Household Furniture, nec*	96	507,354	0	0	0	507,354	0	507,354
		95	644,588	0	0	0	644,588	0	644,588
		94	880,890	0	0	0	880,890	0	880,890
		88	421,953	0	0	0	421,953	8,739	430,692
2521	Wood Office Furniture	96	2,118,974	0	0	0	2,118,974	1,928	2,120,902
		95	2,036,813	0	0	0	2,036,813	2,748	2,039,561
		94	2,738,599	0	0	1,250	2,739,849	0	2,739,849
		88	2,526,256	0	0	27,425	2,553,681	69,376	2,623,057
2522	Office Furniture, Except Wood	96	1,213,831	5	0	0	1,213,836	0	1,213,836
		95	1,530,217	0	0	0	1,530,217	0	1,530,217
		94	1,657,778	0	0	0	1,657,778	1,111	1,658,889
		88	3,063,823	0	0	0	3,063,823	180,736	3,244,559
2531	Public Building & Related Furniture	96	683,716	0	0	5	683,721	5,985	689,706
		95	667,777	0	0	0	667,777	2,523	670,300
		94	806,372	0	0	0	806,372	1,955	808,327
		88	2,466,218	250	0	0	2,466,468	8,665	2,475,133
2541	Wood Partitions & Fixtures	96	411,227	0	0	0	411,227	2,116	413,343
		95	698,839	0	0	0	698,839	173	699,012
		94	828,548	0	0	0	828,548	7,944	836,492
		88	759,942	0	0	0	759,942	5,100	765,042
2542	Partitions & Fixtures, Except Wood	96	865,200	10	0	250	865,460	529	865,989
		95	767,300	90	0	22	767,412	608	768,020
		94	1,042,946	210	0	15	1,043,171	26,551	1,069,722
		88	1,875,302	190	0	0	1,875,492	311	1,875,803

Note: On-site Releases from Section 5 of Form R and Off-site Releases from Section 6 (transfers off-site to disposal) of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.

*nec: not elsewhere classified.



Table 7-14. TRI On-site and Off-site Releases by 4-digit SIC Code, 1988 and 1994-1996: Furniture, SIC Code 25, Continued

SIC Code	Industry	Year	On-site Releases				Total On-site Releases Pounds	Off-site Releases	Total On- and Off-site Releases Pounds
			Total Air Emissions Pounds	Surface Water Discharges Pounds	Underground Injection Pounds	Releases to Land Pounds		Transfers Off-site to Disposal Pounds	
2591	Drapery Hardware & Blinds & Shades	96	333,297	0	0	0	333,297	0	333,297
		95	388,166	0	0	0	388,166	0	388,166
		94	555,236	0	0	0	555,236	0	555,236
		88	346,207	0	0	0	346,207	1,248	347,455
2599	Furniture & Fixtures, nec*	96	573,550	0	0	0	573,550	4,688	578,238
		95	913,939	0	0	0	913,939	15,851	929,790
		94	848,809	0	0	0	848,809	34,224	883,033
		88	1,299,911	0	0	0	1,299,911	70,835	1,370,746
	Multiple within SIC Code 25	96	5,139,717	3	0	25,288	5,165,008	19,412	5,184,420
		95	5,471,343	2	0	7,449	5,478,794	1,142	5,479,936
		94	7,103,554	26	0	753	7,104,333	24,273	7,128,606
		88	5,482,818	1,600	0	1,250	5,485,668	21,810	5,507,478
	Invalid SIC Code within SIC Code 25	96	10,500	0	0	0	10,500	0	10,500
		95	244,270	0	0	0	244,270	0	244,270
		94	460,435	0	0	0	460,435	0	460,435
		88	783,744	11	0	0	783,755	66,400	850,155
	Total for SIC Code 25	96	35,499,005	43	0	26,636	35,525,684	125,857	35,651,541
		95	41,412,706	872	0	9,603	41,423,181	107,119	41,530,300
		94	51,786,463	266	0	63,717	51,850,446	284,499	52,134,945
		88	61,313,783	3,051	0	72,249	61,389,083	974,037	62,363,120

Note: On-site Releases from Section 5 of Form R and Off-site Releases from Section 6 (transfers off-site to disposal) of Form R. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.

*nec: not elsewhere classified.

On-site waste management data for 1994-1996 appear in Table 7-15.

Transfers Off-site for Further Waste Management

The wood household furniture industry (SIC code 2511) reported the largest decrease in the furniture sector from 1994 to 1996 in transfers off-site for further waste management (data for some types of off-site transfers were not collected in 1988). This was a reduction from 2.4 million pounds to 1.7 million pounds, reflecting decreases in all types of transfers except for a small increase in transfers to POTWs.

The miscellaneous furniture and fixtures industry (SIC code 2599) ranked second for decreases, with 166,000 pounds in 1994 and 93,000 pounds

in 1996. Ranking third, the wood partitions and fixtures industry (SIC code 2541) reported a reduction from 138,000 pounds to 70,000 pounds. Transfers to energy recovery accounted for the majority of the reductions for both of these industries.

As with other on-site waste management, the multiple-codes group reported the largest increase in transfers off-site for further waste management. Multiple-codes forms reported 5.9 million pounds in 1994 and 7.0 million pounds in 1996. A large increase in transfers to recycling was the significant factor in this overall change, although transfers to treatment showed a substantial decrease.

The public building and related furniture industry (SIC code 2531) reported 1.2 million pounds of transfers off-site for further waste management in 1994 and 1.3 million pounds in 1996, although the



Chapter 7 — TRI Data for Furniture

Table 7-15. TRI Other On-site Waste Management by 4-digit SIC Code, 1988 and 1994-1996: Furniture, SIC Code 25

SIC Code	Industry	Year	Recycled On-site Pounds	Energy Recovery On-site Pounds	Treated On-site Pounds	Total Other On-site Waste Management Pounds
2511	Wood Household Furniture	96	161,450	12,080	2,737	176,267
		95	184,609	269	0	184,878
		94	152,204	68,400	320	220,924
		88	NA	NA	NA	NA
2512	Upholstered Household Furniture	96	2,005	0	0	2,005
		95	9,002	0	0	9,002
		94	8,645	0	0	8,645
		88	NA	NA	NA	NA
2514	Metal Household Furniture	96	0	0	0	0
		95	4,562	0	0	4,562
		94	24,506	0	0	24,506
		88	NA	NA	NA	NA
2515	Mattresses & Bedsprings	96	0	0	0	0
		95	0	0	0	0
		94	0	0	0	0
		88	NA	NA	NA	NA
2517	Wood TV & Radio Cabinets	96	0	0	0	0
		95	8,600	0	0	8,600
		94	20,500	0	0	20,500
		88	NA	NA	NA	NA
2519	Household Furniture, nec*	96	3,895	0	3,430	7,325
		95	0	0	0	0
		94	5,062	325	0	5,387
		88	NA	NA	NA	NA
2521	Wood Office Furniture	96	689	13,595	0	14,284
		95	24,615	8	0	24,623
		94	26,090	23	0	26,113
		88	NA	NA	NA	NA
2522	Office Furniture, Except Wood	96	273,527	0	13,156	286,683
		95	134,210	0	30,204	164,414
		94	238,336	0	24,665	263,001
		88	NA	NA	NA	NA
2531	Public Building & Related Furniture	96	0	0	31,000	31,000
		95	62,792	0	22,000	84,792
		94	37,254	0	44,000	81,254
		88	NA	NA	NA	NA
2541	Wood Partitions & Fixtures	96	6,404	0	0	6,404
		95	11,087	0	0	11,087
		94	13,395	0	110	13,505
		88	NA	NA	NA	NA
2542	Partitions & Fixtures, Except Wood	96	121,200	0	73,002	194,202
		95	128,877	0	14,708	143,585
		94	99,878	0	15,955	115,833
		88	NA	NA	NA	NA

Note: Data from Section 8 of Form R. Forms with more than one 4-digit SIC code 25 are assigned to the “multiple” category.

*nec: not elsewhere classified



Table 7-15. TRI Other On-site Waste Management by 4-digit SIC Code, 1988 and 1994-1996: Furniture, SIC Code 25, Continued

SIC Code	Industry	Year	Recycled On-site Pounds	Energy Recovery On-site Pounds	Treated On-site Pounds	Total Other On-site Waste Management Pounds
2591	Drapery Hardware & Blinds & Shades	96	32,168	0	348,960	381,128
		95	21,398	93,800	536,661	651,859
		94	14,193	103,800	467,628	585,621
		88	NA	NA	NA	NA
2599	Furniture & Fixtures, nec*	96	0	11,792	0	11,792
		95	20,947	0	0	20,947
		94	51,197	0	25,574	76,771
		88	NA	NA	NA	NA
	Multiple within SIC Code 25	96	2,205,579	0	367,897	2,573,476
		95	2,743,704	0	381,760	3,125,464
		94	958,805	0	418,669	1,377,474
		88	NA	NA	NA	NA
	Invalid SIC Code within SIC Code 25	96	0	0	0	0
		95	0	0	0	0
		94	534	59	0	593
		88	NA	NA	NA	NA
	Total for SIC Code 25	96	2,806,917	37,467	840,182	3,684,566
		95	3,354,403	94,077	985,333	4,433,813
		94	1,650,599	172,607	996,921	2,820,127
		88	NA	NA	NA	NA

Note: Data from Section 8 of Form R. Forms with more than one 4-digit SIC code 25 are assigned to the "multiple" category.

*nec: not elsewhere classified.

1995 amount was higher (1.4 million pounds). This was the second-largest increase reported in the furniture sector. The drapery hardware and blinds and shades industry (SIC code 2591) ranked third for increases, with 354,000 pounds in 1994 and 389,000 pounds in 1996, although the total was lower (249,000 pounds) in the intervening year. Transfers to recycling were the principal factor in the increase for both industries.

Transfers off-site for further waste management reported by the furniture sector for 1988-1996 appear in Table 7-16.

Facilities with Large Increases and Decreases in Releases, 1988-1996

Broyhill Furniture Industries, Inc., in Lenoir, North Carolina (SIC code 2511 in 1988 and codes 2493 and 2511 in 1996), ranked first with a

reported 787,000 pound increase between 1988 and 1996. The Broyhill Miller Hill complex is made up of several wood household furniture manufacturing plants. Three of the plants reported as individual facilities from 1987 to 1990. Beginning in 1991, reporting by the three plants was combined, and the three were identified as a single facility. The decision to combine the TRI reporting followed consolidation of the plants' various air permits under Title V of the Clean Air Act, according to the Broyhill contact. See also "Facilities with Large Increases and Decreases in Waste Management, 1991-1996."

Peters-Revington Furniture in Delphi, Indiana (SIC code 2511), ranked second in increases with an overall 765,000 pounds. Toluene was the largest chemical contributor to the change, accounting for 44% of the increase. The chemical is part of coating formulations for the facility's products, occasional furniture. According to the facility contact, the increase in releases was due to expansion



Chapter 7 — TRI Data for Furniture

Table 7-16. TRI Transfers Off-site for Further Waste Management by 4-digit SIC Code, 1988 and 1994-1996: Furniture, SIC Code 25

SIC Code	Industry	Year	Transfers to Recycling Pounds	Transfers to Energy Recovery Pounds	Transfers to Treatment Pounds	Transfers to POTWs Pounds	Other Off-site Transfers Pounds	Total Transfers Off-site for Further Waste Management Pounds
2511	Wood Household Furniture	96	410,287	1,187,146	99,267	28,668	0	1,725,368
		95	1,426,541	1,392,523	96,054	9,605	250	2,924,973
		94	780,076	1,486,323	126,932	9,058	0	2,402,389
		88	NA	NA	617,728	80,962	209,325	NA
2512	Upholstered Household Furniture	96	2,031	62,684	987	10,825	0	76,527
		95	2,766	33,026	20,574	8,800	0	65,166
		94	5,488	46,171	8,250	8,000	5,772	73,681
		88	NA	NA	17,716	4,537	10,533	NA
2514	Metal Household Furniture	96	195	56,297	1,102	0	0	57,594
		95	1,250	34,184	240	0	0	35,674
		94	0	32,418	59,605	0	0	92,023
		88	NA	NA	42,830	1,250	0	NA
2515	Mattresses & Bedspings	96	0	0	0	0	6,295	6,295
		95	0	0	0	0	0	0
		94	0	0	55	0	0	55
		88	NA	NA	0	0	0	NA
2517	Wood TV & Radio Cabinets	96	5,602	1,300	1,000	20	0	7,922
		95	8,747	12,753	2,250	0	0	23,750
		94	7,280	24,073	2,350	0	0	33,703
		88	NA	NA	32,165	2,000	2,000	NA
2519	Household Furniture, nec*	96	8,652	12,500	0	0	0	21,152
		95	4,986	16,464	0	0	0	21,450
		94	9,801	20,754	3	0	0	30,558
		88	NA	NA	17,350	250	0	NA
2521	Wood Office Furniture	96	405,048	151,436	30,953	50	0	587,487
		95	25,232	232,712	293,254	250	0	551,448
		94	66,320	258,575	260,770	1,000	0	586,665
		88	NA	NA	242,930	2,803	12,431	NA
2522	Office Furniture, Except Wood	96	650,378	102,019	24,455	513	0	777,365
		95	358,425	231,753	5,228	6,965	0	602,371
		94	339,470	364,749	107,091	23,525	0	834,835
		88	NA	NA	789,913	72,937	259,800	NA
2531	Public Building & Related Furniture	96	1,132,903	50,207	116,589	1,254	0	1,300,953
		95	1,195,060	84,024	105,808	1,394	0	1,386,286
		94	1,058,758	69,185	111,277	1,307	0	1,240,527
		88	NA	NA	304,215	11,820	107,234	NA
2541	Wood Partitions & Fixtures	96	2,730	48,721	18,066	0	0	69,517
		95	10,082	103,530	1,000	0	0	114,612
		94	10,967	118,048	8,652	0	0	137,667
		88	NA	NA	108,885	0	4,000	NA
2542	Partitions & Fixtures, Except Wood	96	346,366	100,791	107,438	2,570	0	557,165
		95	183,689	64,430	60,542	395	0	309,056
		94	319,888	148,317	68,457	283	0	536,945
		88	NA	NA	304,434	2,000	84,517	NA

Note: Transfers Off-site for Further Waste Management from Section 6 (excluding transfers off-site to disposal) of Form R. Other Off-site Transfers are transfers reported without a valid waste management code. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the "multiple" category.
***nec:** not elsewhere classified.



Table 7-16. TRI Transfers Off-site for Further Waste Management by 4-digit SIC Code, 1988 and 1994-1996: Furniture, SIC Code 25, Continued

SIC Code	Industry	Year	Transfers to Recycling Pounds	Transfers to Energy Recovery Pounds	Transfers to Treatment Pounds	Transfers to POTWs Pounds	Other Off-site Transfers Pounds	Total Transfers Off-site for Further Waste Management Pounds
2591	Drapery Hardware & Blinds & Shades	96	267,603	104,876	16,516	72	0	389,067
		95	89,594	151,211	7,576	738	0	249,119
		94	105,805	236,237	4,150	7,789	0	353,981
		88	NA	NA	12,390	0	0	NA
2599	Furniture & Fixtures, nec*	96	4,265	88,383	100	0	0	92,748
		95	17,925	101,154	2,991	250	0	122,320
		94	4,890	158,526	2,400	250	0	166,066
		88	NA	NA	33,124	510	125,710	NA
	Multiple within SIC Code 25	96	3,217,820	3,577,778	181,472	61,476	0	7,038,546
		95	3,012,196	4,453,882	193,805	93,781	0	7,753,664
		94	1,452,827	3,380,549	979,785	82,918	0	5,896,079
		88	NA	NA	761,390	70,403	322,174	NA
	Invalid SIC Code within SIC Code 25	96	0	0	1,000	0	0	1,000
		95	3,562	32,270	600	250	0	36,682
		94	40,074	45,068	1,453	250	0	86,845
		88	NA	NA	421,321	1,000	5,670	NA
	Total for SIC Code 25	96	6,453,880	5,544,138	598,945	105,448	6,295	12,708,706
		95	6,340,055	6,943,916	789,922	122,428	250	14,196,571
		94	4,201,644	6,388,993	1,741,230	134,380	5,772	12,472,019
		88	NA	NA	3,706,391	250,472	1,143,394	NA

Note: Transfers Off-site for Further Waste Management from Section 6 (excluding transfers off-site to disposal) of Form R. Other Off-site Transfers are transfers reported without a valid waste management code. Forms with more than one 4-digit SIC code within SIC code 25 are assigned to the “multiple” category. *nec: not elsewhere classified.

and increased sales volume. See also “Facilities with Large Increases and Decreases in Waste Management, 1991-1996.”

Superior Products Sales, Inc., in Plantersville, Mississippi (did not report in 1988 and SIC code 2515 in 1996), was third with 337,000 pounds. Dichloromethane was responsible for 100% of the increase. The chemical is used as a blowing (or expansion) agent in the production of urethane foam for furniture and bedding. No data were reported for dichloromethane in 1988 which was not used as a blowing agent until 1991.

Child Craft Industry, Inc., in Salem, Indiana (SIC codes 2511, 2517, 2519, and 2521 in 1988 and code 2511 in 1996), ranked first in decreases with a 656,000 pound reduction. This manufacturer of wooden children’s furniture, such as cribs and dressers, reduced the amount of methyl ethyl

ketone emitted to air by 241,000 pounds (37% of the total decrease). The decrease was attributable, in part, to the installation of automatic painting equipment which improved paint transfer efficiency and reduced overspray.

Singer Furniture Company in Lenoir, North Carolina (SIC code 2511), was second in decreases with 604,000 pounds. N-butyl alcohol, a component of finishing material used on household wood furniture, accounted for 27% of the decrease. The facility experienced a gradual decrease in production for several years prior to its closure in March 1997. See also “Facilities with Large Increases and Decreases in Waste Management, 1991-1996.”

The third-ranked facility for decreases, Kincaid Furniture in Hudson, North Carolina (SIC code 2511), is a manufacturer of solid wood furniture.



Reductions in the use of toluene were partly attributable to reformulation of finishing materials such as paints and stains. Toluene accounted for 35% of the facility's overall decrease.

Other Apparent Increases and Decreases in Releases, 1988-1996

In the TRI database, there are other facilities with large apparent increases and decreases, which have been identified as reporting errors or plant closures. Because these are errors or plant closures and not actual changes in the data, these facilities are not discussed in detail here. There is one such facility in the furniture sector:

Johnston-Tombigbee Furniture, Columbus, Mississippi, increase of 341,000 pounds, reporting error.

1991-1996 Waste Management Data for Furniture

Table 7-17 summarizes on- and off-site waste management data for the furniture sector for 1991, when TRI began collecting this information, and the three most recent years (1994-1996). The furniture sector's total production-related waste decreased 8.1%, from 62.2 million pounds in 1994 to 57.1 million pounds in 1996 (a 5.0 million-pound reduction). The largest decrease was reported in quantities released on- and off-site, from 47.9 million pounds to 41.9 million pounds, a 5.9 million-pound reduction (12.4%). The sector also reported smaller reductions in on-site recycling, on-site energy recovery, off-site energy recovery, and off-site treatment. The net decrease in each of these cases was less than 400,000 pounds.

Off-site recycling increased from 3.6 million pounds to 5.1 million pounds, or 42.8%. This was an increase of 1.5 million pounds. On-site treatment showed a smaller increase (376,000 pounds).

In several types of waste management, the sector reported larger amounts in 1994 or 1995.

Figure 7-13 illustrates the percentage change in on-site waste management, off-site waste management, quantities released on- and off-site, and total production related waste.

These changes suggest little real improvement in the sector's management of TRI chemicals in waste, as measured by the waste management hierarchy (explained in Chapter 1). Over the 1991-1996 period, quantities released decreased more than total production-related waste decreased, which indicates that the sector relied less on releases and more on other waste management options. However, releases still amounted to 73.4% of total production-related waste reported in 1996. This is a very high percentage for the least desirable waste management option, as set forth in the waste management hierarchy.

Facilities with Large Increases and Decreases in Waste Management, 1991-1996

Peters-Revington Furniture in Delphi, Indiana (SIC code 2511), ranked first in increases in waste management with an overall 558,000 pounds. Toluene reported under quantity released made up 36% of the increase. The chemical is part of coating formulations for the facility's products, occasional furniture. A production increase was primarily responsible for the change. See "Facilities with Large Increases and Decreases in Releases, 1988-1996" for more information.

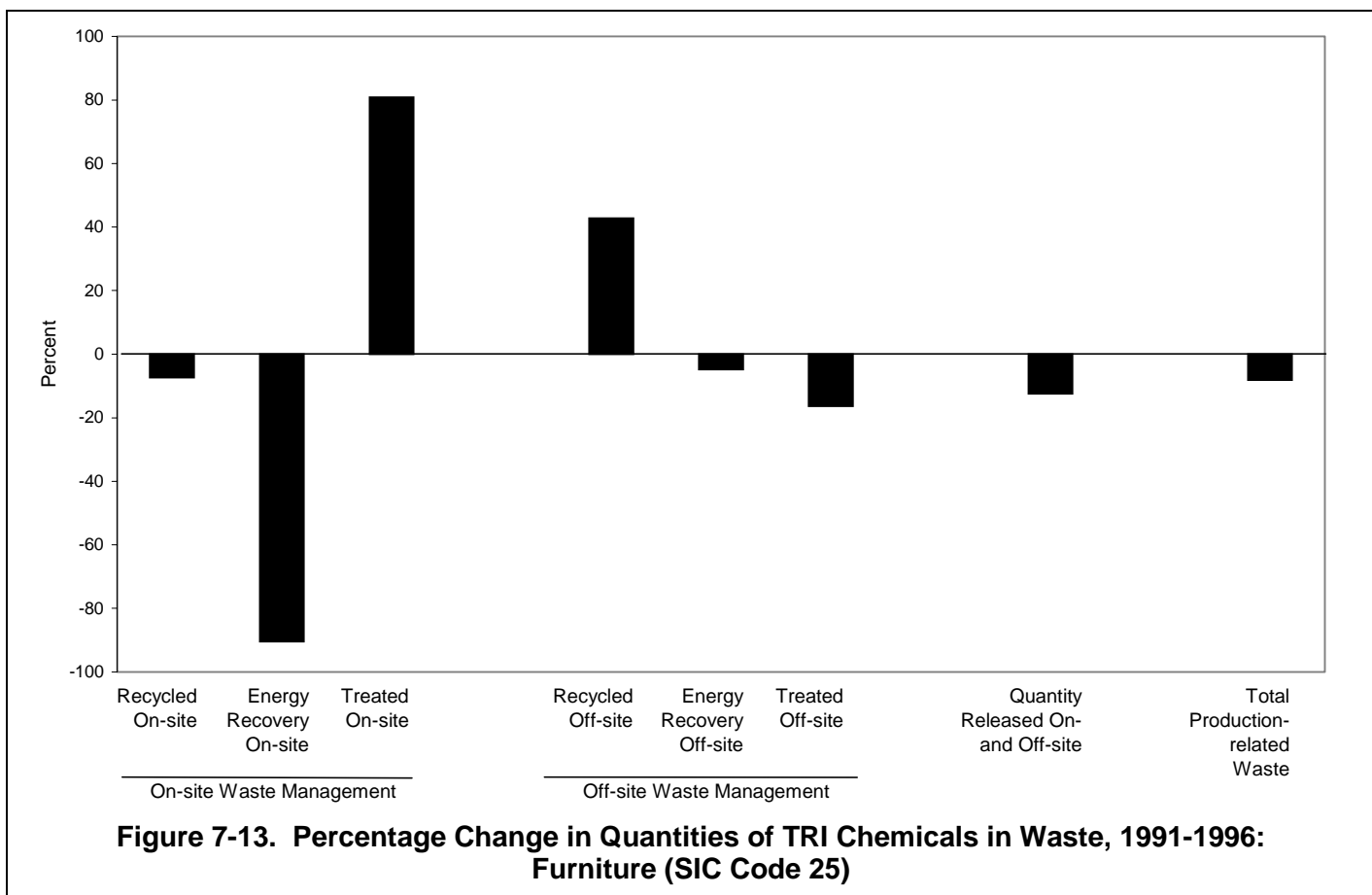
Another Broyhill Furniture Industries, Inc., facility in Lenoir, North Carolina (SIC code 2511 in 1991 and codes 2435, 2436 and 2511 in 1996) was the second largest increaser in waste managed. The Virginia Street plant, site of household furniture manufacture, had a reported 508,000 pound increase. Toluene, a constituent of paints and other finishing materials, accounted for 32% of the change. The facility contact stated that the toluene increase may be due to a higher toluene content of finishing materials. The contact also stated that the facility does not control the make-up of its finishing



Table 7-17. TRI Waste Management Data, 1991, 1994-1996: Furniture, SIC Code 25

Waste Management Activity	1991 Pounds	1994 Pounds	1995 Pounds	1996 Pounds
<u>On-site Waste Management</u>				
Recycled On-site	3,030,729	1,650,599	3,354,403	2,806,917
Energy Recovery On-site	394,527	172,607	94,077	37,467
Treated On-site	464,549	996,931	985,333	840,182
Total On-site Waste Management	3,889,805	2,820,137	4,433,813	3,684,566
<u>Off-site Waste Management</u>				
Recycled Off-site	3,583,027	4,204,474	5,463,991	5,115,489
Energy Recovery Off-site	5,884,807	6,985,222	7,059,720	5,600,991
Treated Off-site	927,481	1,821,776	807,883	776,234
Total Off-site Waste Management	10,395,315	13,011,472	13,331,594	11,492,714
Quantity Released On- and Off-site	47,873,853	53,269,294	46,891,595	41,933,646
Total Production-related Waste	62,158,973	69,100,903	64,657,002	57,110,926
Non-Production-related Waste	68,366	40,437	1,366	148
Waste Management Activity	Change 1994-1995 Percent	Change 1995-1996 Percent	Change 1991-1996 Percent	
<u>On-site Waste Management</u>				
Recycled On-site	103.2	-16.3	-7.4	
Energy Recovery On-site	-45.5	-60.2	-90.5	
Treated On-site	-1.2	-14.7	80.9	
Total On-site Waste Management	57.2	-16.9	-5.3	
<u>Off-site Waste Management</u>				
Recycled Off-site	30.0	-6.4	42.8	
Energy Recovery Off-site	1.1	-20.7	-4.8	
Treated Off-site	-55.7	-3.9	-16.3	
Total Off-site Waste Management	2.5	-13.8	10.6	
Quantity Released On- and Off-site	-12.0	-10.6	-12.4	
Total Production-related Waste	-6.4	-11.7	-8.1	
Non-Production-related Waste	-96.6	-89.2	-99.8	

Note: Does not include delisted chemicals, chemicals added in 1994 and 1995, ammonia, hydrochloric acid, and sulfuric acid. Data from Section 8 of Form R (Current Year, Column B) of year indicated.



Note: Does not include delisted chemicals, chemicals added in 1994 and 1995, ammonia, hydrochloric acid, and sulfuric acid. Data from Section 8 of Form R (Current Year, Column B) of year indicated.

materials because they are purchased from suppliers.

Meridian, Inc., in Spring Lake, Michigan (SIC codes 2522 and 2542), was the top decreaser with an overall 1.2 million-pound reduction. Reporting of toluene accounted for 91% of the overall change between 1991 and 1996. No information was provided by the facility before this publication's deadline.

Singer Furniture Company in Lenoir, North Carolina (SIC code 2511), ranked second in decreases with 811,000 pounds. The Singer plant also ranked second in decreases of releases (see "Facilities with Large Increases and Decreases in Releases, 1988-1996"). Toluene, a solvent for finishing material used on household wood

furniture, accounted for 29% of the decrease. The facility experienced a gradual decrease in production for several years prior to its closure in March 1997.

Steelcase, Inc., in Athens, Alabama (SIC code 2522), was third in decreases with a 617,000 pound reduction. Toluene was used at the facility to adjust the viscosity of paints and as a cleaning solvent in painting processes. Toluene reporting dropped from 370,000 pounds in 1991 to zero pounds in 1996 (60% of the overall reduction) due to several factors: A light aromatic solvent with a low toluene-content replaced a 40% toluene paint-thinner, the facility switched paint vendors in order to acquire materials with lower contents of regulated chemicals, and a dry-powder paint system was implemented. The latter involves the application of paint as a powder, which liquefies and adheres to surfaces in a heating cycle.



The metal office furniture manufacturer now uses toluene in amounts below the TRI reporting threshold.

Other Apparent Increases and Decreases in Production-Related Waste, 1991-1996

In the TRI database, there are other facilities with large apparent increases and decreases, which have been identified as reporting errors or plant closures. Because these are errors or plant closures and not actual changes in the data, these facilities are not discussed in detail here. There are four such facilities in the furniture sector:

Bassett Furniture Industries, Dublin, Georgia, increase of 902,000 pounds, reporting error.

Broyhill Furniture Industries, Inc., Lenoir, North Carolina (Miller Hill Complex), increase of 1.1 million pounds, reporting error.

Steelcase, Inc., Grand Rapids, Michigan, increase of 5.0 million pounds, reporting error.

Steelcase, Inc., Kentwood, Michigan, increase of 3.5 million pounds, reporting error.

Facilities Contacted for Explanations (alphabetical by facility):

Bassett Furniture Industries, Dublin, Georgia: Walt Hammond, October 19 and 21, 1998 (explanation provided)

Broyhill Furniture Industry, Inc. (Virginia Street plant), Lenoir, North Carolina: David Stout, October 21, 1998 (explanation provided)

Broyhill Furniture Industry, Inc. (Miller Hill Complex), Lenoir, North Carolina: David Stout, September 25, 1998 (explanation provided)

Child Craft Industry, Inc., Salem, Indiana: Jenna Robinson, August 18 and August 21, 1998 (explanation provided)

Johnston-Tombigbee Furniture, Columbus, Mississippi: Bill Wells, August 18, 1998 (explanation provided)

Kincaid Furniture Company, Hudson, North Carolina: Delbert Cline, August 18, 1998 (explanation provided)

Meridian, Inc., Spring Lake, Michigan: Rudy Bartels, September 24 and October 23, 1998 (no explanation provided)

Peters-Revington Furniture, Delphi, Indiana: Linus Thornton, October 13, 1998 (explanation provided)

Singer Furniture Company, Lenoir, North Carolina: Dana Crump, September 24, 1998 (explanation provided)

Steelcase, Inc., Athens, Alabama: Dan Tomerlin, August 18, 1998 (explanation provided)

Steelcase, Inc., Grand Rapids, Michigan (no explanation provided)

Steelcase, Inc., Kentwood, Michigan (no explanation provided)

Superior Products Sales, Inc., Plantersville, Mississippi: Ronnie Johnson, September 24, 1998 (explanation provided)



Chapter 7 — TRI Data for Furniture

